IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS

UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
	)	
	)	Civil Action No.
v.	)	
	)	
	)	
A. FINKL & SONS CO.	)	
	)	
Defendant.	)	
	)	

CONSENT DECREE

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WHEREAS Plaintiff United States of America, on behalf of the United States Environmental Protection Agency ("EPA"), filed a complaint in this action seeking civil penalties and injunctive relief pursuant to the Clean Air Act (the "Act"), 42 U.S.C. § 7401 et seq., against Defendant A. Finkl & Sons Co. ("A. Finkl");

WHEREAS A. Finkl owns and operates two electric arc furnaces ("EAF") at its steel manufacturing and forging plant (the "Facility") at 2011 North Southport Avenue, Chicago, Cook County, Illinois;

WHEREAS the Complaint against Defendant alleges that A. Finkl violated Section 111 of the Act, 42 U.S.C. § 7411, and the New Source Performance Standards ("NSPS") for electric arc furnaces for which construction or modification is commenced after August 17, 1983 at 40 C.F.R. Part 60, Subpart AAa, §§ 60.270a-276a;

WHEREAS the Complaint against Defendant alleges that A. Finkl violated the Title V Permit requirements in Sections 503(c) and 504(a) of the Act, 42 U.S.C. §§ 7661b(c) and 7661c(a), by failing to submit an application for a Title V operating permit for the Facility that identifies all applicable requirements and contains a compliance plan for all applicable requirements for which the source was not in compliance (including the requirement to meet the NSPS at 40 C.F.R. Part 60, Subpart AAa) and thereafter operating the EAFs without having a valid operating permit;

WHEREAS the Complaint against Defendant alleges that A. Finkl violated the permitting requirements in the Illinois State Implementation Plan ("SIP") at Illinois Pollution Control Board ("IPCB") Rule 103(b)(1) (currently set forth at 35 Ill. Adm. Code § 201.143) by

undertaking modifications consisting of replacing transformers at the two EAFs without first obtaining operating permits;

WHEREAS the United States and A. Finkl (the "Parties") recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid prolonged and complicated litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest,

NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law except as provided in Section I, below, and with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Section 113(b) of the Act, 42 U.S.C. § 7413(b), and over the Parties. Venue lies in this District pursuant to Section 113(b) of the Act, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1391(b) and (c) and 1395(a), because Defendant resides and is located in this judicial district, the violations alleged in the Complaint are alleged to have occurred in, and Defendant conducts business in, this judicial district. For purposes of this Decree or any action to enforce this Decree, Defendant does not contest the Court's jurisdiction over this Decree or such action or over Defendant and does not contest venue in this judicial district.

2. The Complaint states claims upon which relief may be granted pursuant to Section 113(b) of the Act, 42 U.S.C. § 7413(b).

3. Notice of the commencement of this action has been given to the State of Illinois, as required by Section 113(b) of the Act, 42 U.S.C. § 7413(b).

II. APPLICABILITY

4. This Consent Decree applies to and is binding upon the United States; upon Defendant, acting through its officers, directors, employees, and agents; upon Defendant's officers, directors, and employees, acting in their capacities as officers, directors, and employees; and upon Defendant's successors and assigns.

5. No change in ownership of the Facility (or any portion thereof) shall in any way alter Defendant's obligations or rights under this Consent Decree. Similarly, no change in corporate status or ownership of Defendant shall in any way alter Defendant's obligations or rights under this Consent Decree. At least thirty (30) days prior to transferring ownership or operation of the Facility to any other person, Defendant shall provide a copy of this Consent Decree to each prospective successor owner or operator and shall simultaneously verify such by a written notice to EPA Region 5, the United States Attorney for the Northern District of Illinois, and the United States Department of Justice, in accordance with Section XV of this Decree (Notices).

6. Defendant shall provide a copy of this Consent Decree to all officers, employees, and agents whose duties might reasonably include compliance with any provision of this Decree, as well as to any contractor retained to perform work required under this Consent Decree and shall condition all contracts entered into hereunder upon performance of the work in conformity with the terms of this Consent Decree.

7. In any action to enforce this Consent Decree, Defendant shall not raise as a

defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree.

III. DEFINITIONS

8. Unless otherwise expressly provided herein, terms used in this Consent decree which are defined in the Act or in regulations promulgated pursuant to the Act, shall have the meaning assigned to them in the Act and such regulations. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

a. "Complaint" shall mean the complaint filed by the United States in this action.

b. "Consent Decree" shall mean this Decree and all appendices attached hereto (listed in Section XXIV).

c. "Day" shall mean a calendar day unless expressly stated to be a working day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next working day.

d. "Defendant" or "A.Finkl" shall mean A. Finkl & Sons Co.

e. "Effective Date" shall mean the date of entry of this Decree by the Court after satisfaction of the public notice and comment procedures of 28 C.F.R. § 50.7.

f. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

g. "Facility" shall mean Defendant's steel manufacturing and forging plant located at 2011 North Southport Avenue, Chicago, Cook County, Illinois.

h. "Malfunction" means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

i. "Paragraph" shall mean a portion of this Decree identified by an arabic numeral.

j. "Parties" shall mean the United States and Defendant.

k. "Section" shall mean a portion of this Decree identified by a roman numeral.

l. "SEP" means a supplemental environmental project set forth in Paragraph 21.

m. "SIP" shall mean the Illinois State Implementation Plan.

n. "State" shall mean the State of Illinois.

o. "Title V Permit" means the Title V Permit issued by the Illinois Environmental Protection Agency ("Illinois EPA") to A. Finkl & Sons on October 24, 2000, as well as any permit amendment or renewal or new permit issued for the Facility under the Act.

p. "United States" shall mean the United States of America, acting on behalf of EPA.

IV. CIVIL PENALTY

9. No later than thirty (30) days after the Effective Date of this Consent Decree, Defendant shall pay a civil penalty in the amount of $75,000 to the United States of America. Payment shall be made by FedWire Electronic Funds Transfer ("EFT") to the U.S.

Department of Justice in accordance with instructions to be provided to Defendant upon entry of the Consent Decree by the Financial Management Unit of the U.S. Attorney's Office for the Northern District of Illinois. Any EFTs received at the DOJ lockbox bank after 11:00 a.m. Eastern Time will be credited on the next business day. At the time of payment, Defendant shall simultaneously send written notice of payment and a copy of any transmittal documentation (which should reference USAO file number 2004V0098 and DOJ case number 90-5-2-1-08203 to the United States in accordance with Section XV of this Decree (Notices).

10. In accordance with 31 U.S.C. § 3717 and 40 C.F.R. § 13.11, Defendant shall be subject to three forms of late charges in the event of late payment of the civil penalty required to be paid under this Section or late payment of any stipulated penalties required to be paid under Section VIII, below. One, Defendant shall pay an interest charge on any unpaid penalties that are due and payable under this Section or Section VIII at the rate of the current value of funds to the U.S. Treasury (*i.e.,* the Treasury tax and loan account rate), accruing on the date payment was due and payable beginning on the 31st day after payment was due, unless paid prior to that date. Two, Defendant shall pay an administrative costs (handling) charge of fifteen dollars ($15) for each month past the due date specified by this Consent Decree that it does not pay the penalty in full. Three, in addition to the previous two charges, Defendant shall pay late fees on any unpaid penalty amount still due and payable more than ninety (90) days past the date due. Late fees shall accrue at the rate of six (6) percent per annum and shall be assessed monthly. Interest and handling charges as provided for in this Paragraph shall be tendered along with any late penalty payments in the manner specified above. The United States shall be entitled to collect the costs (including attorneys fees) incurred in any action necessary to collect any portion

of the civil penalty, stipulated penalty, interest, or late payment costs or fees.

V. COMPLIANCE REQUIREMENTS

11. A. Finkl shall achieve, demonstrate and maintain compliance with Section 111 of the Act, 42 U.S.C. § 7411, the NSPS for electric arc furnaces for which construction or modification is commenced after August 17, 1983 at 40 C.F.R. Part 60, Subpart AAa, §§ 60.270a-276a, and Sections 503(c) and 504(a) of the Act, 42 U.S.C. §§ 7661b(c) and 7661c(a), at its Facility as described in this Consent Decree.

12. A. Finkl purchased and has begun installation of pollution control equipment for its electric arc furnaces. This equipment includes, among other things, a five-compartment baghouse with a rated capacity of 100,000 standard cubic feet per minute and a canopy hood. A. Finkl has also begun to implement changes necessary to fully utilize the two existing baghouses at the Facility.

13. No later than December 15, 2005, A. Finkl shall complete installation of the new baghouse, canopy hood and associated equipment and optimize the use of its two existing baghouses including, but not limited to, completion of the following tasks:

a. installation of a canopy hood over the EAFs;

b. installation of a duct system to apply negative pressure in the hood to capture fugitive emissions from the EAFs;

c. modification of the existing duct arrangement to minimize fugitive dust during tapping;

d. implement all changes including installation of ducts, valves and dampers to utilize both existing baghouses during charging, recharging and tapping;

e. installation of devices to monitor and record amperage to the main blower motors to insure proper airflow in the new and existing baghouses;

f. installation of control equipment to automatically control damper positions during all phases of operation of the EAFs including charging and tapping; and

g. installation of the new baghouse, canopy hood, duct work, fans and other ancillary equipment.

14. No later than February 15, 2006, A. Finkl shall begin full operation of all of the equipment described in Paragraph 13, above. A. Finkl shall capture particulate emissions from the EAFs and duct such emissions to at least any two of the three baghouses serving the EAFs and assure that the emission rate from the EAFs does not exceed the emission limitations provided at 40 C.F.R. § 60.272a. A. Finkl shall maintain the third baghouse as an operable baghouse for use with either one or both of the other two baghouses.

15. No later than March 15, 2006, A. Finkl shall operate and maintain the EAFs, including the baghouses and other pollution control equipment serving the EAFs, in such a manner as to assure continuous compliance with the NSPS for electric arc furnaces for which construction or modification is commenced after August 17, 1983 at 40 C.F.R. Part 60, Subpart AAa, §§ 60.270a-276a, and the applicable provisions of the Illinois SIP and the Title V Permit. No later than May 15, 2006, A. Finkl shall interlock or disconnect the skylight/vent at the east end of the melt shop within the roof canopy over the EAFs such that the EAFs cannot operate when the skylight/roof vent is open..

16. Performance Test(s). No later than sixty (60) days after the Effective Date

of the Consent Decree, A. Finkl shall conduct a performance test(s) to determine compliance with the emission limitations for particulate matter and opacity at 40 C.F.R, § 60.272a for each EAF at the Facility. The performance test(s) shall be performed in accordance with the test methods and procedures set forth in Appendix I to this Consent Decree unless the parties mutually agree to modifications thereof. Not later than thirty (30) days prior to the proposed test date, A. Finkl shall submit an "Intent to Test" notification to EPA. The "Intent to Test" notification shall be submitted to the individuals listed in Section XV of the Consent Decree (Notices) and to: (1) Julie K. Armitage, Acting Manager, Illinois EPA, Bureau of Air, Compliance Unit #40, 1021 North Grand Avenue East, Springfield, IL 62702; (2) Kevin Mattison, Illinois EPA, Bureau of Air, 9511 Harrison Street, Des Plaines, IL 60016; and (3) Harrish Narayen, Illinois EPA, Bureau of Air, 9511 West Harrison Street, Des Plaines, IL 60016 . The notification shall describe in detail the proposed test methods and procedures, the source operating parameters, the time and date of the test(s), the person conducting the test(s) and the Facility's Identification Number. Within thirty (30) days, EPA shall approve, approve with comments or disapprove the Intent to Test notification. If EPA does not approve, approve with comments or disapprove the notification within thirty (30) days, the notification shall be deemed approved. A. Finkl shall provide EPA and Illinois EPA with an opportunity to observe such test(s). Within thirty (30) days after the completion of the emissions test(s), A. Finkl shall submit a complete emission test report detailing the result(s) of the test(s) to EPA as provided by Section XV of the Consent Decree (Notices) and to the Illinois EPA officials identified above.

17. Within sixty (60) days of the effective date of this Consent Decree, A. Finkl shall submit an application for an amendment to its Title V Permit to Illinois EPA. The

application shall include, at a minimum, a request to remove the non-applicability provisions in Section 7.3.4a of the Title V Permit, a commitment to comply with the NSPS for electric arc furnaces for which construction or modification is commenced after August 17, 1983 at 40 C.F.R. Part 60, Subpart AAa, §§ 60.270a-276a. The Title V Permit is attached as Appendix II to this Consent Decree.

18. A. Finkl shall submit a copy of the application for an amendment to its Title V Permit and all correspondence related to the application described in Paragraph 17, above, to EPA at the same time the application is submitted to Illinois EPA as provided by Section XV of the Consent Decree (Notices).

19. A. Finkl shall submit a copy of this Consent Decree to Illinois EPA with the application for amendment to its Title V Permit described in Paragraph 17, above.

20. Within fifteen (15) days of receipt of any draft or final Title V permit, A. Finkl shall submit a copy to EPA as provided by Section XV of the Consent Decree (Notices).

VI. SUPPLEMENTAL ENVIRONMENTAL PROJECTS

21. Defendant shall complete two Supplemental Environmental Projects ("SEPs") which are designed to result in environmental improvements beyond those required by applicable law. The first SEP, known as the Diesel Retrofit SEP, is designed to reduce emissions of particulate matter and other air contaminants in diesel vehicle exhaust in Chicago, Illinois. This SEP shall be conducted in accordance with the Scope of Work attached and incorporated by reference as Appendix III, Part A of this Consent Decree. This SEP shall be fully completed within fourteen (14) months of the effective date of the Consent Decree. The second SEP,

known as the Low Nitrogen Oxide ("NO_x") Burner System SEP, is designed to reduce emissions of NO_x from the Facility. The second SEP shall be conducted in accordance with the Scope of Work attached and incorporated by reference as Appendix III, Part B of this Consent Decree. The second SEP shall be fully completed within fifteen (15) months of the effective date of the Consent Decree.

22. Defendant is responsible for the satisfactory completion of the SEPs in accordance with the requirements of this Decree. The Defendant may use contractors and/or consultants in planning and implementing the SEPs.

23. With regard to the SEPs, Defendant certifies the truth and accuracy of each of the following:

a. That Defendant shall spend $75,000 to perform the first SEP and $545,000 to perform the second SEP;

b. That, as of the date of this Decree, Defendant is not required to perform or develop the SEPs by any federal, state, or local law or regulation, nor is Defendant required to perform or develop the SEPs by agreement, grant, or as injunctive relief awarded in any other action in any forum;

c. That Defendant has not received, and is not negotiating to receive, credit for the SEPs in any other enforcement action; and

d. That Defendant will not receive any reimbursement for any portion of the SEPs from any other person.

24. SEP Progress Reports

Beginning on the effective date of this Consent Decree and continuing thereafter until both SEPs

are completed, A. Finkl shall submit quarterly progress reports in the manner prescribed by Section XV (Notices). These reports shall describe the work performed and any problems encountered during the preceding period, work to be performed during the next reporting period, anticipated problems, and planned resolutions of past or anticipated problems. A. Finkl shall provide progress reports within forty-five (45) days following the end of each calendar-year quarter (i.e., May 15, August 15, November 15, February 15).

25. SEP Completion Reports

a. Within sixty (60) days after completing each SEP as specified in Appendix III, Parts A and B, A. Finkl shall submit a separate SEP Completion Report for each SEP to the United States, in accordance with Section XV of this Consent Decree (Notices). The SEP Completion Report shall contain the following information:

i. A detailed description of the SEP as implemented;

ii. A description of any problems encountered in completing the SEP and the solutions thereto;

iii. An itemized list of all SEP costs and acceptable evidence of such costs;

iv. Certification that the SEP has been fully implemented pursuant to the provisions of this Decree; and

v. A description of the environmental and public health benefits resulting from implementation of the SEP (with a quantification of the benefits and pollutant reductions, if feasible).

26. Defendant bears the burden of clearly segregating eligible SEP costs from other costs not eligible for SEP credit. Any unsegregable cost evidence that contains both SEP

eligible and non-SEP eligible cost items shall be disallowed in its entirety. For purposes of Paragraph 25.a.iii, "acceptable evidence" includes invoices, purchase orders, or other documentation that specifically identifies and itemizes the individual costs of the goods or services for which payment is made. Canceled drafts do not constitute acceptable evidence unless such drafts specifically identify and itemize the individual costs of the goods or services for which payment is made. Each submission required under this Paragraph shall be signed by an official with knowledge of the SEP and shall bear the certification language set forth in Paragraph 31, below.

27. Within sixty (60) days after receipt of each SEP Completion Report (unless the United States notifies Defendant that additional time is required), the United States shall notify Defendant whether or not Defendant has satisfactorily completed the SEP. If the SEP has not been satisfactorily completed, stipulated penalties may be assessed under Section VIII of this Consent Decree. Disputes concerning the satisfactory completion of each SEP may be resolved under Section X of this Decree (Dispute Resolution).

28. Any public statement, oral or written, in print, film, or other media, made by Defendant making reference to either of the SEPs under this Decree shall include the following language, "This project was undertaken in connection with the settlement of an enforcement action, United States v. A. Finkl & Sons Co., taken on behalf of the U.S. Environmental Protection Agency under the Clean Air Act."

VII. REPORTING REQUIREMENTS

29. Defendant shall submit the following reports:

a. Within forty-five (45) days after the end of each calendar-year

quarter (i.e., May 15, August 15, November 15, February 15) after lodging of this Consent Decree, until termination of this Decree pursuant to Section XIX, Defendant shall submit a quarterly report for the preceding quarter that shall include:

(i) a description of the status of any compliance measures and completion of milestones for the compliance measures specified in Section V (Compliance Requirements); and

(ii) copies of all records showing any measurements of opacity performed at the Facility including, but not limited to, emission monitoring performed pursuant to 40 C.F.R. §§ 60.272a and 60.273a.

b. If Defendant violates any requirement of this Consent Decree, Defendant shall notify the United States of such violation and its likely duration in writing within ten (10) working days of the day Defendant first becomes aware of the violation, with an explanation of the violation's likely cause and of the remedial steps taken, and/or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, Defendant shall include a statement to that effect in the report. Defendant shall immediately investigate to determine the cause of the violation and then shall submit an amendment to the report, including a full explanation of the cause of the violation, within thirty (30) days of the day Defendant becomes aware of the cause of the violation.

30. All reports shall be submitted to the persons designated in Section XV of this Consent Decree (Notices).

31. Each report submitted by Defendant under this Section shall be signed by an official of the submitting party and include the following certification:

> I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gather and present the information contained therein. I further certify, based on my inquiry of those individuals immediately responsible for obtaining the information, that I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

32. Defendant shall retain all underlying documents from which it has compiled any report or other submission required by this Consent Decree until five years after termination of the Decree.

33. The reporting requirements of this Consent Decree do not relieve Defendant of any reporting obligations required by the Act or implementing regulations, or by any other federal, state, or local law, regulation, or requirement.

34. Any information provided pursuant to this Consent Decree may be used by the United States in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

VIII. STIPULATED PENALTIES

35. Defendant shall be liable to the United States for stipulated penalties in the amounts set forth in this Section for failure to comply with the requirements of this Consent Decree specified below, unless excused under Section IX (Force Majeure). "Compliance" shall include completion of the activities under this Consent Decree, or any work plan or other plan approved under this Consent Decree, in accordance with all applicable requirements of this Consent Decree, and within the specified time schedules established by and approved under this

Consent Decree. "Compliance" shall also include complying with the NSPS for electric arc furnaces for which construction or modification is commenced after August 17, 1983 at 40 C.F.R. Part 60, Subpart AAa, §§ 60.270a-276a, from March 15, 2006 until the termination of the Consent Decree as provided by Section XIX (Termination). Unless otherwise noted, the days in each Period of Noncompliance, below, are presumed to be consecutive days of violation.

36. Emissions Limits

a. Subject to the provisions of Subparagraph c, below, the following stipulated penalties shall accrue per violation per day for any noncompliance with the emission limit at 40 C.F.R. § 60.272a(a)(1) on or after March 15 , 2006:

Penalty Per Violation Per Day	Period of Noncompliance
$1,000	1st through14th day
$2,000	15th through 30th day
$3,000	31st day and beyond

For purposes of determining the amount of stipulated penalties due under Subparagraph a of this paragraph, the violation of the emission limit at 40 C.F.R. § 60.272a(a)(1) shall be presumed to continue from the date of any stack test evidencing such violation until A. Finkl demonstrates, through follow-up stack testing, that the violation has ceased.

b. Subject to the provisions of Subparagraph c, below, the following stipulated penalties shall accrue per violation per day for any noncompliance with the opacity standards at 40 C.F.R. § 60.272a(a)(2), 60.272a(a)(3) and 60.272a(b) on or after March 15 , 2006:

Penalty Per Violation Per Day	Period of Noncompliance

$1,000	1st through 14th day
$2,000	15th through 30th day
$3,000	31st day and beyond

c. Malfunction. No stipulated penalties for exceedances of the standards at 40 C.F.R. § 60.272a during startup, shutdown or malfunction shall apply. Provided, however, Defendant shall pay stipulated penalties in the amounts prescribed in Subparagraphs a and b, above, for each instance in which Defendant failed to maintain and operate the EAFs and associated pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions and an exceedance of the standards at 40 C.F.R. § 60.272a occurred. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to EPA including, but not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the Facility as provided by 40 C.F.R. § 60.11(d). If A. Finkl finds that emissions in excess of the standards at 40 C.F.R. § 60.272a(a)(1), 60.272a(a)(2), 60.272a(a)(3) or 60.272a(b) are the result of a malfunction, A. Finkl shall (i) promptly cease the operation causing the excess emissions except to the extent that continued operation is necessary to prevent injury to persons or severe damage to equipment; and (ii) report the excess emissions to EPA as required by Section VII of the Consent Decree (Reporting Requirements). Any disputes regarding whether emissions in excess of the standards at 40 C.F.R. § 60.272a(a)(1), 60.272a(a)(2), 60.272a(a)(3) or 60.272a(b) are the result of a malfunction shall be resolved as provided by Section X of the Consent Decree (Dispute Resolution).

d. The following stipulated penalties shall accrue per violation per

day for any noncompliance with the monitoring of operations requirements at 40 C.F.R. § 60.274a, the test methods and procedures requirements at 40 C.F.R. § 60.275a, and the recordkeeping and reporting requirements at 40 C.F.R. § 60.276a on or after March 15, 2006 :

Penalty Per Violation Per Day	Period of Noncompliance
$250	1st through 14th day
$500	15th through 30th day
$1,000	31st day and beyond

e. The following stipulated penalties shall accrue per violation per day for any noncompliance with the emission monitoring requirements at 40 C.F.R. § 60.273a on or after March 15, 2006:

Penalty Per Violation Per Day	Period of Noncompliance
$1,000	1st through 14th day
$2,000	15th through 30th day
$3,000	31st day and beyond

37. Compliance Milestones

a. The following stipulated penalties shall accrue per violation per day for any failure to meet any of the requirements identified in Subparagraph b:

Penalty Per Violation Per Day	Period of Noncompliance
$300	1st through 14th day
$500	15th through 30th day
$1,000	31st day and beyond

b. The stipulated penalties in Subparagraph a, above, shall accrue for

failing to meet the milestones provided in the Consent Decree for the following compliance measures:

(i) installation of the pollution equipment as specified in Paragraph 13;

(ii) operation of all equipment as specified in Paragraph 14;

(iii) performance of the performance test as specified in Paragraph 15; and

(iv) submittal of an application for a Title V Permit amendment as specified in Paragraphs 17 through 20.

38. Reporting Requirements. The following stipulated penalties shall accrue per violation per day for any noncompliance with the reporting requirements of Section VII of this Consent Decree (Reporting Requirements):

Penalty Per Violation Per Day	Period of Noncompliance
$200	1st through 14th day
$300	15th through 30th day
$500	31st day and beyond

39. SEP Compliance

a. In the event that Defendant's actual, eligible expenditures spent in connection with performance of each of the SEPs described in Section VI of this Consent Decree total less than ninety (90) percent of the estimated cost of the SEPs as set forth in Paragraph 23.a, above, Defendant shall be liable for stipulated penalties, as set forth below. Such penalties shall accrue from the date set for completion of each of the SEPs in Appendix III, Parts A and B of

this Consent Decree, in the case of penalties pursuant to Paragraph 39.a.i and ii., below, or from the date of notification by the United States that the SEP has not been satisfactorily completed, in the case of penalties pursuant to Paragraph 39.a.iii and iv, below. Where Defendant has halted or abandoned completion of the SEP, such penalties shall accrue from the date set for completion of the SEP.

i. If A. Finkl has satisfactorily completed the Diesel Retrofit SEP but expended less than $67,500 in eligible costs (90 percent of $75,000), A. Finkl shall pay a stipulated penalty amounting to $75,000 minus the amount of money A. Finkl spent in eligible costs on the Diesel Retrofit SEP.

ii. If A. Finkl has satisfactorily completed the Low NO_x Burner System SEP but expended less than $490,500 in eligible costs (90 percent of $545,000), A. Finkl shall pay a stipulated penalty amounting to $545,000 minus the amount of money A. Finkl spent in eligible costs on the Low NO_x Burner System SEP.

iii. If A. Finkl has not satisfactorily completed the Diesel Retrofit SEP, A. Finkl shall pay a stipulated penalty amounting to $75,000.

iv. If A. Finkl has not satisfactorily completed the Low NO_x Burner System SEP, A. Finkl shall pay a stipulated penalty amounting to $545,000.

b. If each SEP is satisfactorily completed but not in accordance with the schedule set forth in Appendix III, Parts A and B to this Consent Decree, A. Finkl shall pay stipulated penalties for failure to meet the milestones set out in Appendix III, Parts A and B to

this Consent Decree, as follows:

Penalty Per Violation Per Day	Period of Noncompliance
$300	1st through 14th day
$500	15th through 30th day
$1,000	31st day and beyond

Such penalties shall accrue from the date each such milestone was to have been met.

c. The following stipulated penalties shall accrue per violation per day for any noncompliance with the SEP progress reports required by Paragraph 24, above, or SEP Completion Reports required by Paragraph 25, above:

Penalty Per Violation Per Day	Period of Noncompliance
$200	1st through 14th day
$300	15th through 30th day
$500	31st day and beyond

40. Any payment due pursuant to Paragraph 39.a.iii and/or iv, above, shall be made in the manner set forth in Section IV of this Consent Decree (Civil Penalty) in accordance with instructions to be provided to Defendant by the Financial Management Unit of the U.S. Attorney's Office for the Northern District of Illinois, except that the transmittal letter shall also reference that payment is being made pursuant to this Paragraph.

41. All stipulated penalties must be paid within thirty (30) days of the date that they accrue. Except as provided in Paragraph 40, above, stipulated penalties shall be paid by certified or cashier's check in the amount due, payable to the "Treasurer, United States of America," referencing DOJ No. 90-5-2-1-08203 and United States Attorney's Office file number

2004V0098, and shall be delivered to the office of the United States Attorney, Northern District of Illinois, 219 S. Dearborn St., Chicago, Illinois 60604.

42. Except as provided in Paragraph 39.a, above, all stipulated penalties shall begin to accrue on the day after the performance is due or on the day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree, except that when two or more violations are based upon the same noncompliance, the higher stipulated penalty shall apply.

43. To the extent compliance has not been achieved with the applicable provisions, penalties shall continue to accrue as provided in accordance with Paragraph 42 during any dispute resolution with interest on accrued penalties payable and calculated at the rate established by the Secretary of the Treasury, pursuant to 28 U.S.C. § 1961, but such penalties need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to the Court, accrued penalties determined to be owing, together with accrued interest, shall be paid to the United States within thirty (30) days of the effective date of the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to the Court and the United States prevails in whole or in part, A. Finkl shall, within sixty (60) days of receipt of the Court's decision or order, pay all accrued penalties determined by the Court to be owing, together with accrued interest, except as provided in Subparagraph c, below;

c. If the District Court's decision is appealed by any Party, A. Finkl

shall, within fifteen (15) days of receipt of the final appellate court decision, pay all accrued penalties determined to be owing to the United States, together with accrued interest.

44. Should A. Finkl fail to pay stipulated penalties and accrued interest in accordance with the terms of this Consent Decree, the United States shall be entitled to collect interest and late payment costs and fees, as set forth in Paragraph 10, above, together with the costs (including attorneys fees) incurred in any action necessary to collect any such stipulated penalties, interest, or late payment costs or fees.

45. A. Finkl's payment of stipulated penalties under this Section shall be in addition to any other rights or remedies available to the United States by reason of A. Finkl's failure to comply with any requirement of this Consent Decree or applicable law.

IX. FORCE MAJEURE

46. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Defendant, its contractors, or any entity controlled by Defendant that delays or prevents the performance of any obligation under this Consent Decree despite Defendant's best efforts to fulfill the obligation. "Best efforts" include using best efforts to anticipate any potential force majeure event and to address the effects of any such event (a) as it is occurring and (b) after it has occurred, such that the delay is minimized to the greatest extent possible. "Force Majeure" does not include Defendant's financial inability to perform any obligation under this Consent Decree.

47. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, as to which Defendant intends to assert a claim of force majeure, Defendant shall provide notice in writing, as provided in Section XV of this Consent

Decree (Notices), within seven (7) days of the time Defendant first knew of, or by the exercise of due diligence should have known of, the event. Such notification shall include an explanation and description of the reasons for the delay; the anticipated duration of the delay; a description of all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; and Defendant's rationale for attributing such delay to a force majeure event. Failure to comply with the above requirements shall preclude Defendant from asserting any claim of force majeure. Defendant shall be deemed to know of any circumstance of which Defendant, its contractors, or any entity controlled by Defendant knew or should have known.

48. Defendant shall have the burden of proving, by a preponderance of the evidence, that each event described in the preceding Paragraph was a force majeure event; that Defendant gave the notice required by the preceding Paragraph; that Defendant took all reasonable steps to prevent or minimize any delay caused by the event; and that any period of delay it claims was attributable to the force majeure event was caused by that event.

49. If the Parties agree that Defendant could not have prevented or mitigated any delay, or anticipated delay, attributable to a force majeure event by the exercise of due diligence, the Parties may agree to extend the time for Defendant's performance of the affected compliance requirement for the time necessary to complete the obligation. In such circumstances, the appropriate modification shall be made pursuant to Section XVIII of this Consent Decree (Modification), where the modification is to a term of this Consent Decree or is a material modification of Appendix III to this Consent Decree. In the event the Parties cannot agree, the matter shall be resolved in accordance with Section X of this Consent Decree (Dispute

Resolution). An extension of time for performance of the obligations affected by a force majeure event shall not, of itself, extend the time for performance of any other obligation.

X. DISPUTE RESOLUTION

50. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. However, such procedures shall not apply to actions by the United States to enforce obligations of the Defendant that have not been disputed in accordance with this Section.

51. Informal Dispute Resolution. Any dispute which arises under or with respect to this Consent Decree shall first be the subject of informal negotiations. The period of informal negotiations shall not exceed (twenty) 20 days from the time Defendant sends the United States a written Notice of Dispute in accordance with Section XV of this Consent Decree (Notices), unless that period is modified by written agreement. Such Notice of Dispute shall state clearly the matter in dispute. The failure to submit a Notice of Dispute within ten (10) days from the date upon which the issue in dispute first arises waives Defendant's right to invoke dispute resolution under this Section.

52. Formal Dispute Resolution.

a. If the Parties cannot resolve a dispute by informal negotiations pursuant to the preceding Paragraph, then the position advanced by the United States shall be considered binding unless, within 20 days after the conclusion of the informal negotiation period, Defendant invokes formal dispute resolution procedures by serving on the United States, in accordance with Section XV of this Consent Decree (Notices), a written Statement of Position on

the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, together with a statement indicating whether formal dispute resolution should proceed upon the administrative record.

b. Within 20 days after receipt of Defendant's Statement of Position, the United States will serve on Defendant its Statement of Position, including any supporting factual data, analysis, opinion or documentation, together with a statement indicating whether formal dispute resolution should proceed upon the administrative record. Within 20 days after receipt of the United States' Statement of Position, Defendant may submit a Reply.

c. If there is disagreement as to whether dispute resolution should proceed upon the administrative record, the Parties shall follow the procedures determined by the United States to be applicable. However, if Defendant ultimately appeals to the Court to resolve the dispute, the Court shall determine the applicable standard and scope of review, in accordance with Paragraph 53.c, below.

d. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to this Section. That record, together with other appropriate records maintained by EPA or submitted by Defendant, shall constitute the administrative record upon which the matter in dispute is to be resolved, when such resolution proceeds on the administrative record under this Section.

53. Resolution of Disputes.

a. The Director of the Air and Radiation Division, EPA Region 5, will issue a final decision resolving the matter in dispute. Where the dispute pertains to the

performance of the Compliance Program under Section V of this Consent Decree or performance of the SEP under Section VI, or is otherwise accorded review on the administrative record under applicable principles of administrative law, the decision shall be upon the administrative record maintained by EPA pursuant to Paragraph 52.d above. The decision of the Air and Radiation Division Director shall be binding upon Defendant, subject only to the right to seek judicial review, in accordance with Subparagraph b, below.

b. The decision issued by EPA under Subparagraph a, above, shall be reviewable by this Court upon a motion filed by Defendant and served upon the United States within 30 days of receipt of EPA's decision. In addition to containing the supporting factual data, analysis, opinion, and documentation upon which Defendant relies, the motion shall describe the history of the matter in dispute, the relief requested, and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree, as well as Defendant's position on whether the dispute should be resolved on the administrative record.

c. In any judicial proceeding pursuant to Subparagraph b, above, that concerns the performance of the Compliance Program under Section V of this Consent Decree or performance of the SEP under Section VI, or that is otherwise accorded review on the administrative record under applicable principles of administrative law, Defendant shall have the burden of demonstrating that the decision of the Air and Radiation Division Director is arbitrary and capricious or otherwise not in accordance with law. Judicial review of such decision shall be on the administrative record compiled in accordance with Paragraph 52.d, above. Judicial review for all other disputes shall be governed by applicable principles of law.

54. The invocation of dispute resolution procedures under this Section shall

not extend, postpone, or affect in any way any obligation of Defendant under this Consent Decree, not directly in dispute, unless the United States agrees or the Court determines otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first day of noncompliance, but payment shall be stayed pending resolution of the dispute as provided in Paragraph 43, above. In the event that Defendant does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section VIII (Stipulated Penalties).

XI. RIGHT OF ENTRY

55. The United States and its representatives, including attorneys, contractors, and consultants, shall have the right of entry to the Facility covered by this Consent Decree, at all reasonable times, upon presentation of credentials to:

a. monitor the progress of activities required under this Consent Decree;

b. verify any data or information submitted to the United States in accordance with the terms of this Consent Decree;

c. obtain samples and, upon request, splits of any samples taken by Defendant or its representative, contractors, or consultants; and

d. assess Defendant's compliance with this Consent Decree.

56. This Consent Decree in no way limits or affects any right of entry and inspection held by the United States pursuant to applicable federal laws, regulations, or permits.

XII. FAILURE OF COMPLIANCE

57. The United States does not, by its consent to the entry of this Consent

Decree, warrant or aver in any manner that Defendant's compliance with any aspect of this Consent Decree will result in compliance with provisions of the Act, 42 U.S.C. § 7401 et seq. Notwithstanding the United States' review and approval of any documents submitted to it by Defendant pursuant to this Consent Decree, Defendant shall remain solely responsible for compliance with the terms of the Act and this Consent Decree.

XIII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

58. This Consent Decree constitutes full and final settlement of the civil claims of the United States for the violations alleged in the Complaint that was filed in this action.

59. This Consent Decree shall not be construed to prevent or limit the rights of the United States to obtain penalties or injunctive relief under the Act, or under other federal or state laws, regulations, or permit conditions, except as expressly specified herein.

60. Defendant is responsible for achieving and maintaining complete compliance with all applicable federal, State and local laws, regulations, and permits; and Defendant's compliance with this Consent Decree shall be no defense to any action commenced pursuant to said laws, regulations, or permits.

61. This Consent Decree does not limit or affect the rights of Defendant or of the United States against any third parties, not party to this Consent Decree, nor does it limit the rights of third parties, not party to this Consent Decree, against Defendant.

62. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Decree.

63. The United States reserves any and all legal and equitable remedies

available to enforce the provisions of this Consent Decree, except as expressly stated herein.

XIV. COSTS

64. The Parties shall each bear their own costs of litigation of this action, including attorneys fees, except as provided in Paragraphs 10 and 44, above.

XV. NOTICES

65. Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:

To the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-2-1-08203

and

United States Attorney
219 S. Dearborn St.
Chicago, Illinois 60604

and

Regional Counsel
U.S. Environmental Protection Agency
Region 5
77 W. Jackson Blvd. (C-14J)
Chicago, IL 60604

and

Chief, Air Enforcement
and Compliance Assurance Branch

U.S. Environmental Protection Agency
Region 5
77 W. Jackson Blvd.(AE-17J)
Chicago, IL 60604

To Defendant:

Joseph E. Curci, President
A. Finkl & Sons Co.
2011 North Southport Avenue
Chicago, IL 60614

and

James T. Harrington, Esq.
McGuire Woods LLP
77 West Wacker, Suite 4100
Chicago, Illinois 60601

66. Notices submitted pursuant to this Section shall be deemed effective upon receipt, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XVI. EFFECTIVE DATE

67. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court.

XVII. RETENTION OF JURISDICTION

68. The Court shall retain jurisdiction of this case until termination of this Consent Decree, for the purpose of enabling any of the Parties to apply to the Court for such further order, direction, or relief as may be necessary or appropriate for the construction or modification of this Consent Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes in accordance with Section X of this Decree (Dispute Resolution).

XVIII. MODIFICATION

69. The terms of this Consent Decree may be modified only by a subsequent written agreement signed by all the Parties and approved by the Court as a modification to this Decree. The terms and schedules contained in Appendix III, Parts A, B and C of this Decree may be modified upon written agreement of the Parties without Court approval, unless any such modification effects a material change to the terms of this Consent Decree or materially affects the ability to meet the objectives of this Decree.

70. Notwithstanding the preceding Paragraph, upon application by a Party pursuant to Paragraph 68, above, the Court may enforce, supervise, construe, or modify this Consent Decree, as necessary to further its objectives.

XIX. TERMINATION

71. After Defendant has maintained continuous compliance with the requirements of the Act and this Consent Decree for a period of one (1) year after the Effective Date of this Consent Decree, has complied with all other requirements of this Consent Decree, including those relating to the SEPs and other environmentally beneficial project required by Section VI of this Consent Decree and has paid the civil penalty and any accrued stipulated penalties as required by this Consent Decree, Defendant may file and serve upon the United States a "Motion for Termination of Consent Decree," with supporting documentation demonstrating that Defendant has successfully completed all requirements of this Decree. The United States shall have the right to oppose Defendant's motion for termination and to seek an extension of the Decree. If the United States opposes termination of this Consent Decree, Defendant shall have the burden of proof to the Court's satisfaction that the requisite conditions

for termination of the Decree have been satisfied.

XX. PUBLIC PARTICIPATION

72. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. Defendant consents to entry of this Consent Decree without further notice.

XXI. SIGNATORIES/SERVICE

73. Each undersigned representative of Defendant and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.

74. This Consent Decree may be signed in counterparts, and such counterpart signature pages shall be given full force and effect.

75. Defendant hereby agrees not to oppose entry of this Consent Decree by the Court or to challenge any provision of the Decree, unless the United States has notified Defendant in writing that it no longer supports entry of the Decree.

76. Defendant hereby agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons.

XXII. INTEGRATION/APPENDICES

77. This Consent Decree and Appendices I, II and III, Parts A and B, constitute the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Decree and supersede all prior agreements and understandings, whether oral or written. Other than Appendices I, II and III, Parts A and B, which are attached to and incorporated in this Decree, no other document, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Decree or the settlement it represents, nor shall it be used in construing the terms of this Decree.

XXIII. FINAL JUDGMENT

78. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment between the United States and Defendant.

XXIV. APPENDICES

79. The following appendices are attached to and incorporated into this Consent Decree:

"Appendix I " is the Protocol for Particulate Testing at A. Finkl, CleanAir Project No: 9939, Revision 1: July 7, 2006.

"Appendix II" is the Title V Permit issued by Illinois EPA to A. Finkl & Sons on October 24, 2000.

"Appendix III" consists of Part A, Diesel Retrofit Supplemental Environmental Project and Part B, Low Nitrogen Oxide ("NO_x") Burner System Supplemental Environmental Project.

Dated and entered this __ day of _____, _____.

_____
UNITED STATES DISTRICT JUDGE
Northern District of Illinois

FOR PLAINTIFF UNITED STATES OF AMERICA:

Date: 8/7/06

BENJAMIN FISHEROW
Deputy Section Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, DC 20044-7611

Date: 8/8/06

STEVEN J. WILLEY
Senior Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, DC 20044-7611

PATRICK FITZGERALD
United States Attorney for the
Northern District of Illinois

Date: _____

JONATHAN HAILE
Assistant United States Attorney
United States Attorney's Office
Northern District of Illinois
5th Floor
219 North Dearborn Street
Chicago, Illinois 60604
(312) 886-2055

Date: _____

_____
BHARAT MATHUR
Acting Regional Administrator
U.S. Environmental Protection Agency,
Region 5
77 W. Jackson Boulevard
Chicago, IL 60604

Date: _____

_____
CHRISTINE M. LISZEWSKI
Associate Regional Counsel
U.S. Environmental Protection Agency,
Region 5
77 W. Jackson Boulevard
Chicago, IL 60604

FOR DEFENDANT A. FINKL & SONS CO.

Date: _____

_____

JOSEPH E. CURCI
President and Chief Financial Officer
A. Finkl & Sons Co.
2011 N. Southport Avenue
Chicago, IL 60614
(773) 975-2555

Agent Authorized to Accept Service on Behalf of Above-Signed Party:

Typed Name:

Address:

_____

APPENDIX I

Protocol for Particulate Testing at A. Finkl & Sons Co.

Clean Air Project No. : 9939

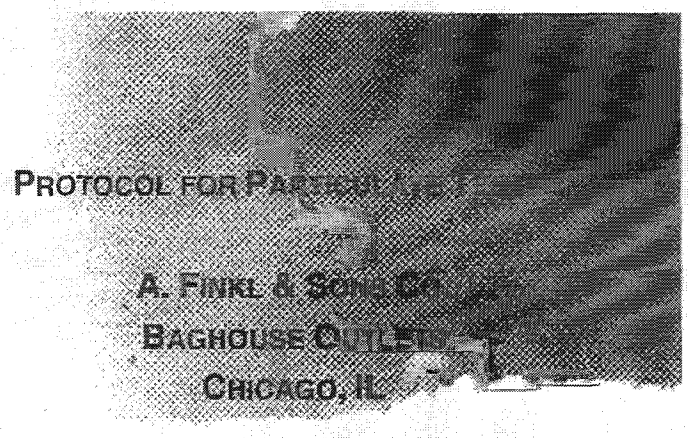
Revision 1: July 7, 2006

PROTOCOL FOR PARTICULATE EMISSIONS TESTING

A. FINKL & SONS CO.
BAGHOUSE OUTLETS
CHICAGO, IL

CLIENT REFERENCE NO: EAF SAMPLING
CLEANAIR PROJECT NO: 9939
REVISION 1: JULY 7, 2006

CleanAir®



PROTOCOL FOR PARTICULATE

A. FINKL & SONS CO.
BAGHOUSE OUTLET
CHICAGO, IL

CLIENT REFERENCE NO: EAF SAMPLING
CLEANAIR PROJECT NO: 9939
REVISION 1: JULY 7, 2006

CleanAir

CleanAir Engineering
500 W. Wood Street
Palatine, IL 60067-4975
800-627-0033
www.cleanair.com

A. Finkl & Sons Co.
2011 N. Southport Ave.
Chicago, IL 60614

PROTOCOL FOR PARTICULATE TESTING

Prepared for:
A. FINKL & SONS CO.
BAGHOUSE OUTLETS
CHICAGO, IL

Client Reference No: EAF Sampling
CleanAir Project No: 9939
Revision 1: July 7, 2006

Submitted by,

Mark Roach, P.E.
Project Manager

Reviewed by,

Peter Kaufmann
Manager, Midwest Source Group

REVISION HISTORY

PROTOCOL FOR PARTICULATE TESTING

Revision History

Revision No:	Date	Pages	Comments
0	05/17/06	All	Original version of document.
1	7/7/06	All	Changes based on discussions with regulators.

CONTENTS

PROJECT OVERVIEW

A. Finkl & Sons Co. (Finkl) contracted Clean Air Engineering (CleanAir) to perform particulate testing at their facility located in Chicago, IL for compliance purposes.

The test parameters included the following pollutants:

- total suspended particulate (TSP)
- opacity

The testing is tentatively scheduled to take place at the outlets of the three baghouses during the week of August 7, 2006. Coordinating the field testing will be:

John Guliana	Mark Roach, P.E.
A. Finkl & Sons Co.	Clean Air Engineering
2011 N. Southport Ave.	500 W. Wood St.
Chicago, IL 60614-4079	Palatine, IL 60067-4929
johng@finkl.com	mroach@cleanair.com

The facility is covered under 40 CFR 60.subpart AAa – Standard of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983. The standard for particulate matter exiting from a control device is restricted to 0.0052 grains/dscf or less.

Table 1-1 outlines the tentative test schedule for the test program. Two of the baghouses are positive pressure style and are identical in design. The third baghouse is the typical negative pressure design. The two positive pressure baghouses are designated East/North and West respectively. The negative pressure design baghouse is designated East/South (E/S). The names of each baghouse will be reported as follows:

• East/North positive pressure baghouse	East baghouse
• West positive pressure baghouse	West baghouse
• East/South negative pressure baghouse	New baghouse

DISCUSSION OF TEST PROGRAM

The facility can operate any combination of baghouses. Two baghouses typically run during operations. Two sampling scenarios are proposed for this program. The first scenario is to operate and sample the two positive pressure baghouses simultaneously. The second scenario is to operate and sample one of the positive pressure baghouse and the negative pressure baghouse simultaneously.

The facility begins operating the two electric arc furnaces around 18:00. The furnaces are alternately charged during the overnight hours when electrical demand is low. Operations typically conclude at 10:30 the next morning. Subpart AAa requires a 4 hour particulate run time. The extended run times allow measurement of particulate during the complete heat cycle. Therefore, sampling will take place during the overnight hours.

PROJECT OVERVIEW

Opacity readings are required in accordance with the procedures of §60.11. The minimum total time of observation required is 3 hours (30 6-minute) readings. The opacity readings can only be performed during the early evening and morning hours when daylight is available. It is anticipated that opacity will be read during the first 1½ to 2 hours. A total of three hours of opacity will be performed during each scenario.

There will be a total of three opacity readers. Two will read opacity on each of the operating baghouses and one will read opacity of the furnace building. Opacity readings will be performed by Finkl's certified opacity readers and CleanAir personnel.

Table 1-1:
Proposed Schedule of Activities

Day	Activity	Location	Test Method	Replicates	Sample Time
1	Mobilization Set-up on East & West Baghouses				
2	East BH				
	Particulate Matter	Outlet(s)	4, 5D	2	240 min.
	Flow[1]	Inlet	2	2	
	Opacity	Outlet	9	2	60 min
	West BH				
	Particulate Matter	Outlet(s)	4, 5D	2	240 min
	Flow[1]	Inlet	2	2	
	Opacity	Outlet	9	2	
	Opacity	Furnace building	9	2	60 min
3	East BH				
	Particulate Matter	Outlet(s)	4, 5D	1	240 min.
	Flow[1]	Inlet	2	1	
	Opacity	Outlet	9	1	60 min
	West BH				
	Particulate Matter	Outlet(s)	4, 5D	1	240 min
	Flow[1]	Inlet	2	1	
	Opacity	Outlet	9	1	60 min.
	Opacity	Furnace building	9	1	60 min
	Set up on New BH				
4	East BH[2]				
	Particulate Matter	Outlet(s)	4, 5D	2	240 min
	Flow[1]	Inlet	2	2	60 min.
	Opacity	Outlet	9	2	
	New BH				
	Particulate Matter	Outlet(s)	1-5	2	240 min
	Opacity	Outlet	9	2	60 min.
	Opacity[3]	Furnace building	9	2	60 min

Table 1-2: continued

Day	Activity	Location	Test Method	Replicates	Sample Time
5	East BH				
	Particulate Matter	Outlet(s)	4, 5D	1	240 min.
	Flow[1]	Inlet	2	1	60 min
	Opacity	Outlet	9	1	
	New BH				
	Particulate Matter	Outlet(s)	1-5	1	240 min.
	Opacity	Outlet	9	1	60 min
	Opacity[3]	Furnace building	9	1	60 min
	Demobilization				

[1] Flow measurements will be made along the inlet duct to the positive pressure baghouses. Flow measurement for the negative pressure baghouse will be made at the outlet.
[2] During second sampling scenario either the East BH or West BH will be sampled.
[3] Opacity reading of the building may not be necessary during the second testing sceanario if there is no change in collection.

The negative pressure baghouse will be sampled in accordance with EPA Method 5. The two positive pressure baghouses will be sampled in accordance with EPA Method 5D using Method 17.

Both positive pressure baghouses, East and West have 5 compartments each consisting of two sections. Each section has its own vent and is evenly divided with a set number of bags exiting from the vent. Sampling will be conducted above the bags at the outlet. Therefore, each section will be sampled individually

The requirements of Method 5D are addressed as follows:

1. "All compartments (sections) must be sampled during the test."
   - All ten sections will be sampled during the test program.
2. "The same number of sections must be sampled during each run."
   - Four sections will be sampled during each run
3. "Minimum number of sample points per run: 24."
   - Each section will have 3 sample ports.
   - Four points will be sampled per port for a total of 48 points per run.
4. "Minimum number of sample points per test: 72."
   - Forty eight sample points will be sampled per run.
   - Over the test, 3 sample runs at total of 144 points will be sampled.
5. "Minimum number of sample points per section: 8."
   - Each section will have 12 sample points.

PROJECT OVERVIEW

The velocities of exhaust gases from the two positive pressure baghouses are too low to measure accurately with the Type S pitot tube. Flow measurements will be taken along the inlet duct to the positive pressure baghouses. The measured inlet velocity will be used in calculating the flow at each point and through each section. Flow measurement for the negative pressure baghouse will be made at the outlet.

During sampling the following information will be recorded in accordance with §60.276a(f):

- charge weights and materials and tap weights and materials;
- heat times, including start and stop times , and a log of process operation, including periods of no operation during; and
- control device operation log.

A presentation of the proposed test results tables is provided in the Section 2.

RESULTS

Table 2-1:
East Baghouse Outlet, Particulate Results

Run No.	1	2	3	Average
Date (2006)				
Start Time (approx.)				
Stop Time (approx.)				
Gas Conditions				
O_2 Oxygen (dry volume %)				
CO_2 Carbon dioxide (dry volume %)				
T_s Sample temperature (°F)				
B_w Actual water vapor in gas (% by volume)				
Gas Flow Rate				
Q_a Volumetric flow rate, actual (acfm)				
Q_s Volumetric flow rate, standard (scfm)				
Q_{std} Volumetric flow rate, dry standard (dscfm)				
Sampling Data				
V_{mstd} Volume metered, standard (dscf)				
Laboratory Data				
m_n Net matter collected (g)				
Particulate Results				
C_{sd} Particulate Concentration (lb/dscf)				
C_a Particulate Concentration (lb/acf)				
C_{sd} Particulate Concentration (gr/dscf)				
$E_{lb/hr}$ Particulate Rate (lb/hr)				

DESCRIPTION OF INSTALLATION

PROCESS DESCRIPTION

Finkl manufactures forging die steel, plastic mold steels, die casting steels & custom open-die forgings. The facility operates two 90 ton electric arc furnaces. The furnaces are covered with a canopy hood that collects emissions during the process. The hoods then directs the flue gas though a combination of baghouses. The emissions from the ingot surface preparation and cleaning of steel forging processes are vented to the baghouses, also.

The entire heat from the beginning of charging to end of tapping is approximately 4.5 to 5 hours. The charging phase will include two or three scrap loadings. The refining phase takes approximately 30 to 60 minutes. Tapping time is 5 to 10 minutes. The furnaces start times are staggered by approximately 30 minutes.

Each positive pressure baghouse is equipped with a pulse jet air cleaning system. Each baghouse has five compartments. Each compartment is divided into two equal sections with each section having separate vents. A compartment is off line during cleaning which last for 3 minutes. There is a 90 second idle time before cleaning begins on the next compartment. If during sampling of a section the cleaning cycle begins sampling will be temporarily stopped until cleaning is complete and the flow through the compartment is restored. The entire cleaning cycle for a baghouse takes approximately 25 minutes. Each section will be sampled for a total of 60 minutes. Therefore, while sampling, each section will be off line twice.

Testing will be performed at the following locations:

- East Baghouse – Inlet
- East Baghouse – Outlet
- West Baghouse – Inlet
- West Baghouse - Outlet
- New Baghouse – Outlet

DESCRIPTION OF INSTALLATION

DESCRIPTION OF SAMPLING LOCATION(S)

Sampling point locations will determined according to EPA Method 1.
Table 3-1 outlines the planned sampling point configurations. Any variation or field changes to the planned configuration will be documented and provided in the final report. Figure 3-1 through 3-3 illustrate(s) the proposed sampling points and orientation of sampling ports for each of the sources tested in the program.

Table 3-1:
Sampling Points

Location	Constituent	Method	Run No.	Ports	Points per Port	Minutes per Point	Total Minutes	Figure
East BH Inlet	Flow	2	1-3	2	12	NA	NA	3-1
East BH Outlet[1]	Particulate	5D	1-3	12	4	5	240	3-2
West BH Inlet	Flow	2	1-3	2	12	NA	NA	3-1
West BH Outlet[1]	Particulate	5D	1-3	12	4	5	240	3-2
New BH Outlet	Particulate	1-5	1-3	2	12	10	240	3-3

[1] The four outlet sections will be sampled per run on the East and West baghouses Each comparment will have 3 sample ports. Four points will be sampled per port.

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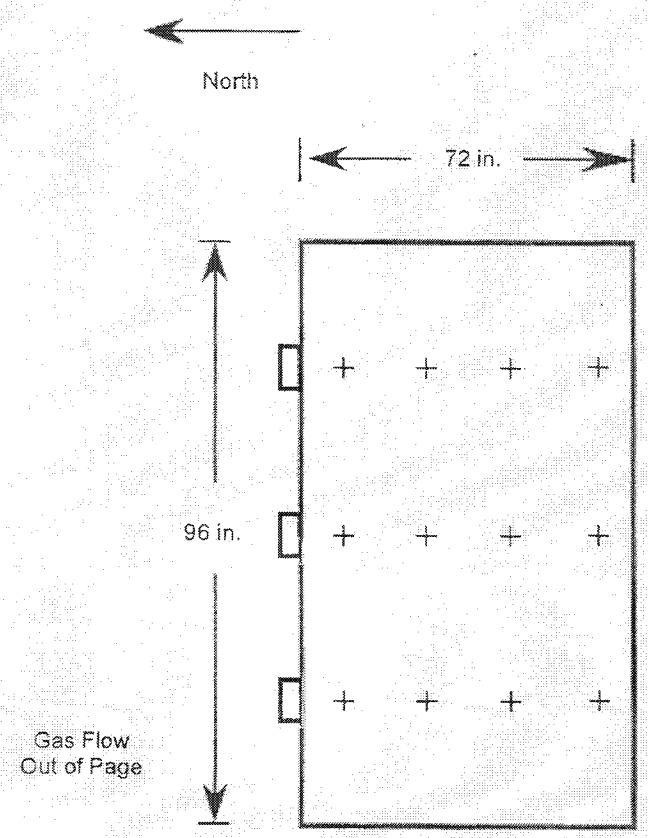
Client Reference No: EAF Sampling
CleanAir Project No: 9939

DESCRIPTION OF INSTALLATION



+ Indicates sampling point

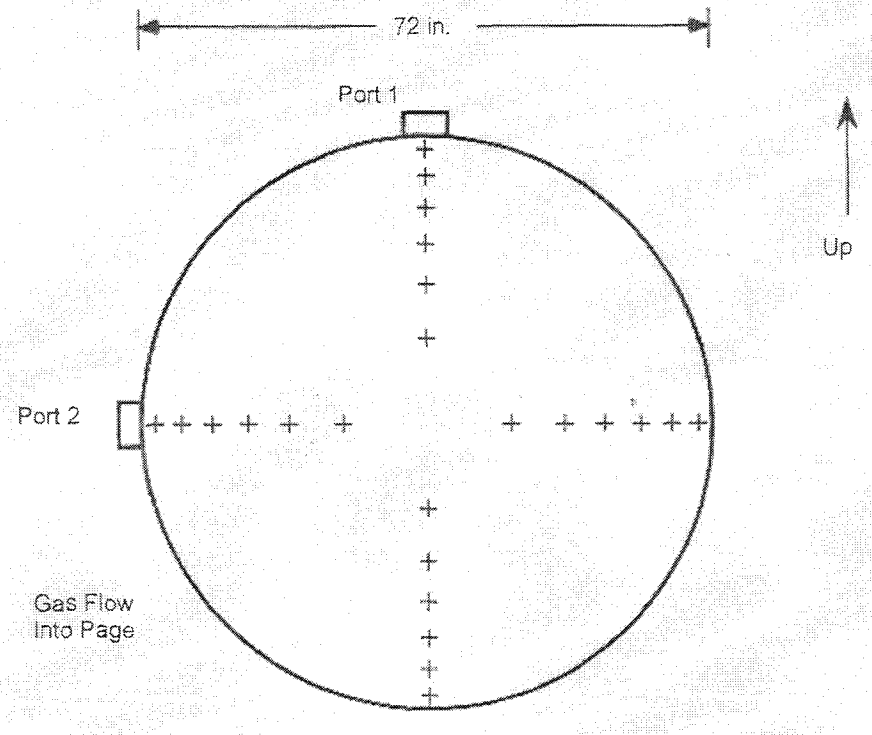
Sampling Point	Port to Point Distance (in.)
1	84
2	60
3	36
4	12

Equivalent Duct diameters upstream from flow disturbance (A):	NA	Limit: 0.5
Equivalent Duct diameters downstream from flow disturbance (B):	NA	Limit: 2.0

Figure 3-1: East and West Baghouse Outlet
Sampling Point Determination (EPA Method 1)

DESCRIPTION OF INSTALLATION

DESCRIPTION OF SAMPLING LOCATION (CONTINUED)



Traverse Point	Port to Point Distance (in.)
1	70.5
2	67.2
3	63.5
4	59.2
5	54
6	46.4
7	25.6
8	18.0
9	12.8
10	8.5
11	4.8
12	1.5

Duct diameters upstream from flow disturbance (A):	TBD[1]	Limit: 0.5
Duct diameters downstream from flow disturbance (B):	TBD[1]	Limit: 2.0

[1] Sampling ports have yet to be installed. Maximum number of traverse points assumed.

Figure 3-2: East and West Baghouse Inlet Traverse Point Determination (EPA Method 1)

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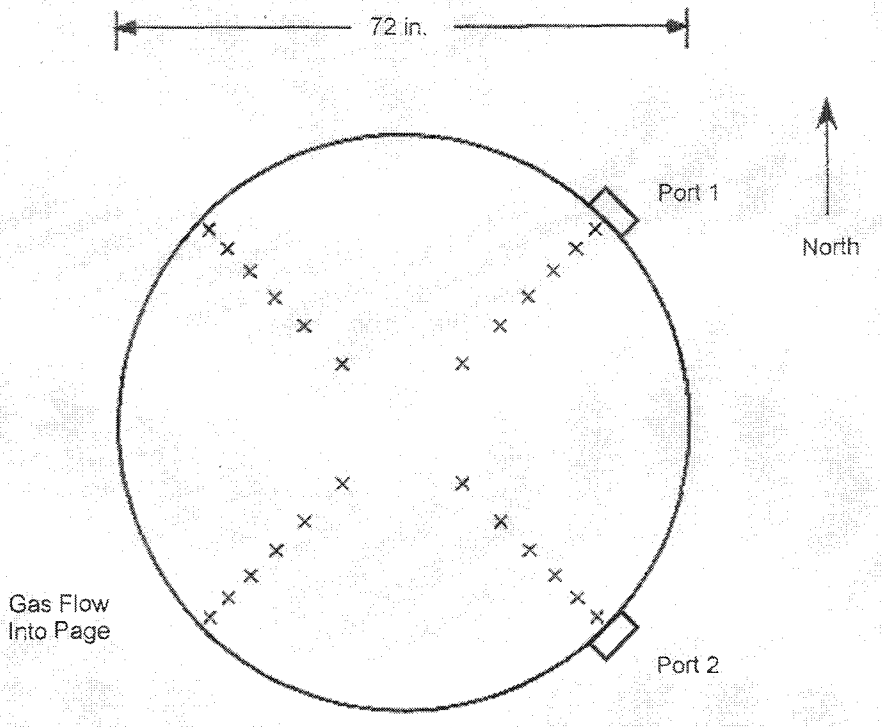
Client Reference No: EAF Sampling
CleanAir Project No: 9939

DESCRIPTION OF INSTALLATION



Sampling Point	Port to Point Distance (in.)
1	70.5
2	67.2
3	63.5
4	59.2
5	54
6	46.4
7	25.6
8	18.0
9	12.8
10	8.5
11	4.8
12	1.5

Duct diameters upstream from flow disturbance (A): TBD[1] Limit: 0.5
Duct diameters downstream from flow disturbance (B): TBD[1] Limit: 2.0

[1] Sampling ports have yet to be installed. Maximum number of sample points assumed.

Figure 3-3: New Baghouse Sampling Point Determination (EPA Method 1)

METHODOLOGY

Clean Air Engineering will follow procedures as detailed in U.S. Environmental Protection Agency (EPA) Methods 1, 2, 3, 4, 5D and 17. The following table summarizes the methods and their respective sources.

Table 4-1:
Summary of Sampling Procedures

Title 40 CFR Part 60 Appendix A	
Method 1	"Sample and Velocity Traverses for Stationary Sources"
Method 2	"Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)"
Method 3	"Gas Analysis for the Determination of Dry Molecular Weight"
Method 4	"Determination of Moisture Content in Stack Gases"
Method 5D	"Determination of Particulate Matter Emissions from Positive Pressure Fabric Filters"
Method 17	"Determination of Particulate Matter Emissions from Stationary Sources"

These methods appear in detail in Title 40 of the Code of Federal Regulations (CFR) and on the World Wide Web at http://www.cleanair.com.

Diagrams of the sampling apparatus and major specifications of the sampling, recovery and analytical procedures are summarized for each method in Appendix A.

Clean Air Engineering will follow specific quality assurance and quality control (QA/QC) procedures as outlined in the individual methods and in USEPA "Quality Assurance Handbook for Air Pollution Measurement Systems: Volume III Stationary Source-Specific Methods", EPA/600/R-94/038C. Additional QA/QC methods as prescribed in Clean Air's internal Quality Manual will also be followed. Results of all QA/QC activities performed by Clean Air Engineering are summarized in the test report.

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APPENDIX

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Client Reference No: EAF Sampling
CleanAir Project No: 9939

TEST METHOD SPECIFICATIONS

A

Specification Sheet for EPA Method 5

Source Location Name(s)	E/S Baghouse Outlet
Pollutant(s) to be Determined	Particulate Matter (PM)
Other Parameters to be Determined from Train	Gas Density, Moisture, Flow Rate

	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	240 minutes
No. of Sample Traverse Points	N/A	24
Sample Time per Point	N/A	10 minutes
Sampling Rate	Isokinetic (90-110%)	Isokinetic (90-110%)
Sampling Probe		
Nozzle Material	Stainless Steel or Glass	Borosilicate Glass
Nozzle Design	Button-Hook or Elbow	Button-Hook
Probe Liner Material	Borosilicate or Quartz Glass	Borosilicate Glass
Effective Probe Length	N/A	24 in
Probe Temperature Set-Point	248°F±25°F	248°F±25°F
Velocity Measuring Equipment		
Pitot Tube Design	Type S	Type S
Pitot Tube Coefficient	N/A	0.84
Pitot Tube Calibration by	Geometric or Wind Tunnel	Geometric
Pitot Tube Attachment	Attached to Probe	Attached to Probe
Metering System Console		
Meter Type	Dry Gas Meter	Dry Gas Meter
Meter Accuracy	±2%	±1%
Meter Resolution	N/A	0.01 cubic feet
Meter Size	N/A	0.1 dcf/revolution
Meter Calibrated Against	Wet Test Meter or Standard DGM	Wet Test Meter
Pump Type	N/A	Rotary Vane
Temperature Measurements	N/A	Type K Thermocouple/Pyrometer
Temperature Resolution	5.4°F	1.0°F
ΔP Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
ΔH Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
Barometer	Mercury or Aneroid	Digital Barometer calibrated w/Mercury Aneroid
Filter Description		
Filter Location	After Probe	Exit of Probe
Filter Holder Material	Borosilicate Glass	Borosilicate Glass
Filter Support Material	Glass Frit	Teflon
Cyclone Material	N/A	None
Filter Heater Set-Point	248°F±25°F	248°F±25°F
Filter Material	Glass Fiber	Glass Fiber
Other Components		
Description	N/A	N/A
Location	N/A	N/A
Operating Temperature	N/A	N/A

Specification Sheet for EPA Method 5

	Standard Method Specification	Actual Specification Used
Impinger Train Description		
Type of Glassware Connections	Ground Glass or Equivalent	Screw Joint with Silicone Gasket
Connection to Probe or Filter by	Direct Glass Connection	Direct Glass Connection
Number of Impingers	4	4
Impinger Stem Types		
Impinger 1	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 2	Greenburg-Smith	Greenburg-Smith
Impinger 3	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 4	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 5		
Impinger 6		
Impinger 7		
Impinger 8		
Gas Density Determination		
Sample Collection	Multi-point integrated	Multi-Point Integrated
Sample Collection Medium	Flexible Gas Bag	Vinyl Bag
Sample Analysis	Orsat or Fyrite Analyzer	Orsat
Sample Recovery Information		
Probe Brush Material	Nylon Bristle	Nylon Bristle
Probe Rinse Reagent	Acetone	Acetone
Probe Rinse Wash Bottle Material	Glass or Polyethylene	Teflon
Probe Rinse Storage Container	Glass or Polyethylene	Glass
Filter Recovered?	Yes	Yes
Filter Storage Container	N/A	Polystyrene
Impinger Contents Recovered?	Provision	N/A
Impinger Rinse Reagent	Deionized Distilled Water	N/A
Impinger Wash Bottle	Glass or Polyethylene	N/A
Impinger Storage Container	Glass or Polyethylene	N/A
Analytical Information		
Method 4 H_2O Determination by	Volumetric or Gravimetric	Gravimetric and Volumetric
Filter Preparation Conditions	Dessicate 24 hours minimum at ambient temperature	Dessicate 24 hours minimum at ambient temperature
Front-Half Rinse Preparation	Evaporate at ambient temperature and pressure	Evaporate at ambient temperature and pressure
Back-Half Analysis	N/A	N/A
Additional Analysis	N/A	None

Specification Sheet for EPA Method 5D

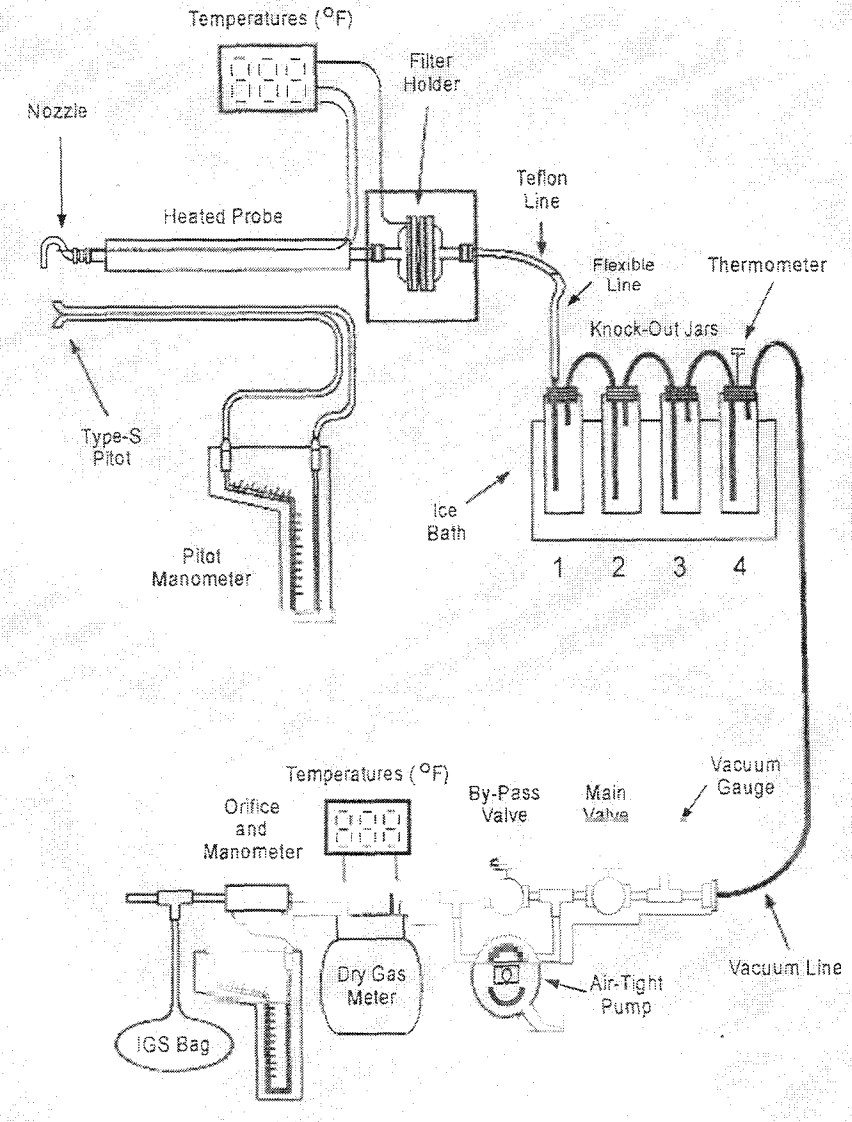
Source Location Name(s)	E/N & W Baghouse Outlet
Pollutant(s) to be Determined	Particulate Matter (PM)
Other Parameters to be Determined from Train	Gas Density, Moisture

	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	240 minutes
No. of Sample Traverse Points	N/A	24
Sample Time per Point	N/A	10 minutes
Sampling Rate	Isokinetic (90-110%)	Isokinetic (90-110%)
Sampling Probe		
Nozzle Material	Stainless Steel or Glass	Borosilicate Glass
Nozzle Design	Button-Hook or Elbow	Button-Hook
Probe Liner Material	Borosilicate or Quartz Glass	Borosilicate Glass
Effective Probe Length	N/A	8 feet
Probe Temperature Set-Point	248˚F±25˚F	248˚F±25˚F
Velocity Measuring Equipment		
Pitot Tube Design	Type S	Type S
Pitot Tube Coefficient	N/A	0.84
Pitot Tube Calibration by	Geometric or Wind Tunnel	Geometric
Pitot Tube Attachment	Attached to Probe	Separate Probe
Metering System Console		
Meter Type	Dry Gas Meter	Dry Gas Meter
Meter Accuracy	±2%	±1%
Meter Resolution	N/A	0.01 cubic feet
Meter Size	N/A	0.1 dcf/revolution
Meter Calibrated Against	Wet Test Meter or Standard DGM	Wet Test Meter
Pump Type	N/A	Rotary Vane
Temperature Measurements	N/A	Type K Thermocouple/Pyrometer
Temperature Resolution	5.4˚F	1.0˚F
ΔP Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
ΔH Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
Barometer	Mercury or Aneroid	Digital Barometer calibrated w/Mercury Aneroid
Filter Description		
Filter Location	After Probe	Exit of Probe
Filter Holder Material	Borosilicate Glass	Borosilicate Glass
Filter Support Material	Glass Frit	Teflon
Cyclone Material	N/A	None
Filter Heater Set-Point	248˚F±25˚F	248˚F±25˚F
Filter Material	Glass Fiber	Glass Fiber
Other Components		
Description	N/A	N/A
Location	N/A	N/A
Operating Temperature	N/A	N/A

Specification Sheet for EPA Method 5D

	Standard Method Specification	Actual Specification Used
Impinger Train Description		
Type of Glassware Connections	Ground Glass or Equivalent	Screw Joint with Silicone Gasket
Connection to Probe or Filter by	Direct Glass Connection	Direct Glass Connection
Number of Impingers	4	4
Impinger Stem Types		
Impinger 1	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 2	Greenburg-Smith	Greenburg-Smith
Impinger 3	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 4	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 5		
Impinger 6		
Impinger 7		
Impinger 8		
Gas Density Determination		
Sample Collection	Multi-point integrated	Multi-Point Integrated
Sample Collection Medium	Flexible Gas Bag	Vinyl Bag
Sample Analysis	Orsat or Fyrite Analyzer	Orsat
Sample Recovery Information		
Probe Brush Material	Nylon Bristle	Nylon Bristle
Probe Rinse Reagent	Acetone	Acetone
Probe Rinse Wash Bottle Material	Glass or Polyethylene	Teflon
Probe Rinse Storage Container	Glass or Polyethylene	Glass
Filter Recovered?	Yes	Yes
Filter Storage Container	N/A	Polystyrene
Impinger Contents Recovered?	Provision	N/A
Impinger Rinse Reagent	Deionized Distilled Water	N/A
Impinger Wash Bottle	Glass or Polyethylene	N/A
Impinger Storage Container	Glass or Polyethylene	N/A
Analytical Information		
Method 4 H_2O Determination by	Volumetric or Gravimetric	Gravimetric and Volumetric
Filter Preparation Conditions	Dessicate 24 hours minimum at ambient temperature	Dessicate 24 hours minimum at ambient temperature
Front-Half Rinse Preparation	Evaporate at ambient temperature and pressure	Evaporate at ambient temperature and pressure
Back-Half Analysis	N/A	N/A
Additional Analysis	N/A	None

EPA Method 5
Sampling Train Configuration



Knock Out Jar Contents

Knock Out Jar 1	100 mL H_2O
Knock Out Jar 2	100 mL H_2O
Knock Out Jar 3	Empty
Knock Out Jar 4	Silica Gel

EPA Method 5
Sample Recovery Flowchart

- Tare all sample containers before sample collection
- Mark all liquid levels and final weights on the outside of each sample container
- Seal all sample containers with Teflon tape
- If recycling, bake silica gel for two hours at 350 degrees F (175 degrees C)

Container 1
Fiberglass Filter
Petri Dish

Remove with tweezers to original container. Brush any loose particulate or filter fibers into sample container

If necessary fold in half and place into container

Visual Inspection

Container 2
Front Half (FH) Rinse
250 ml Glass

Probe liner, nozzle, cyclone or cyclone bypass and filter FH

Brush/rinse 3X with acetone (6X for metal components)

Visual Inspection

Label container and measure volume by weight

Container 3
Silica Gel

Measure volume by weight, note any color change

Recycle silica gel

*Containers 4 and 7 are required when the testing includes a back half analysis

Container 4*
Back Half (BH) Rinse
500 ml Plastic

BH filter housing, Z-piece, impingers 1, 2, 3 and U-Bends

Measure volume by weight

Empty contents into labeled container

Rinse with water

Visual Inspection

Label container and measure volume by weight

Blanks

Container 5
Filter Blank
Plastic Petri Dish

Clean, unused tared filter

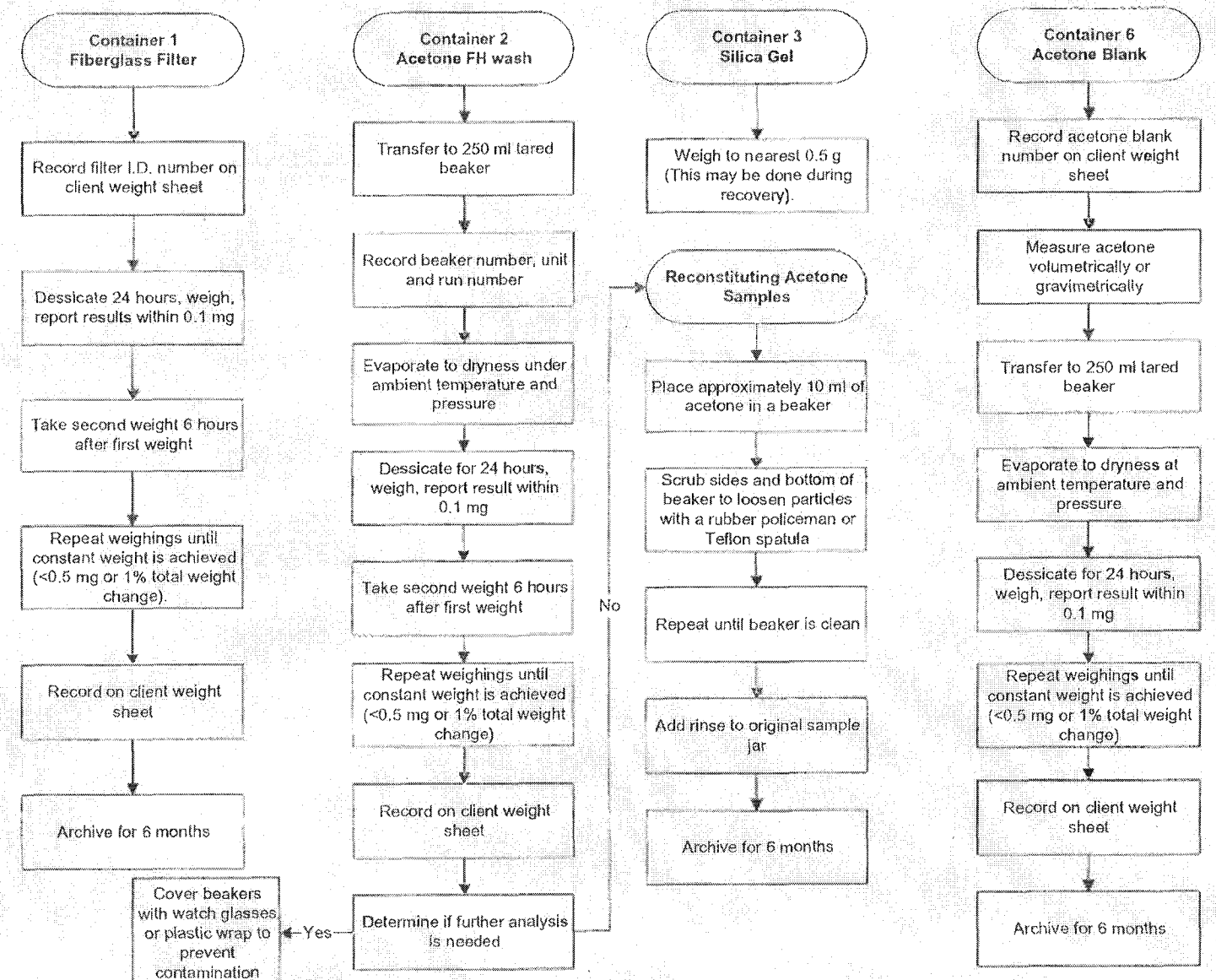
Container 6
Acetone Blank
250 ml Glass

200 ml of acetone from rinse bottle. Record lot number

Container 7*
D.I. Water Blank
250 ml Plastic

200 ml of water from rinse bottle

EPA Method 5
Analytical Flowchart



Specification Sheet for EPA Method 17

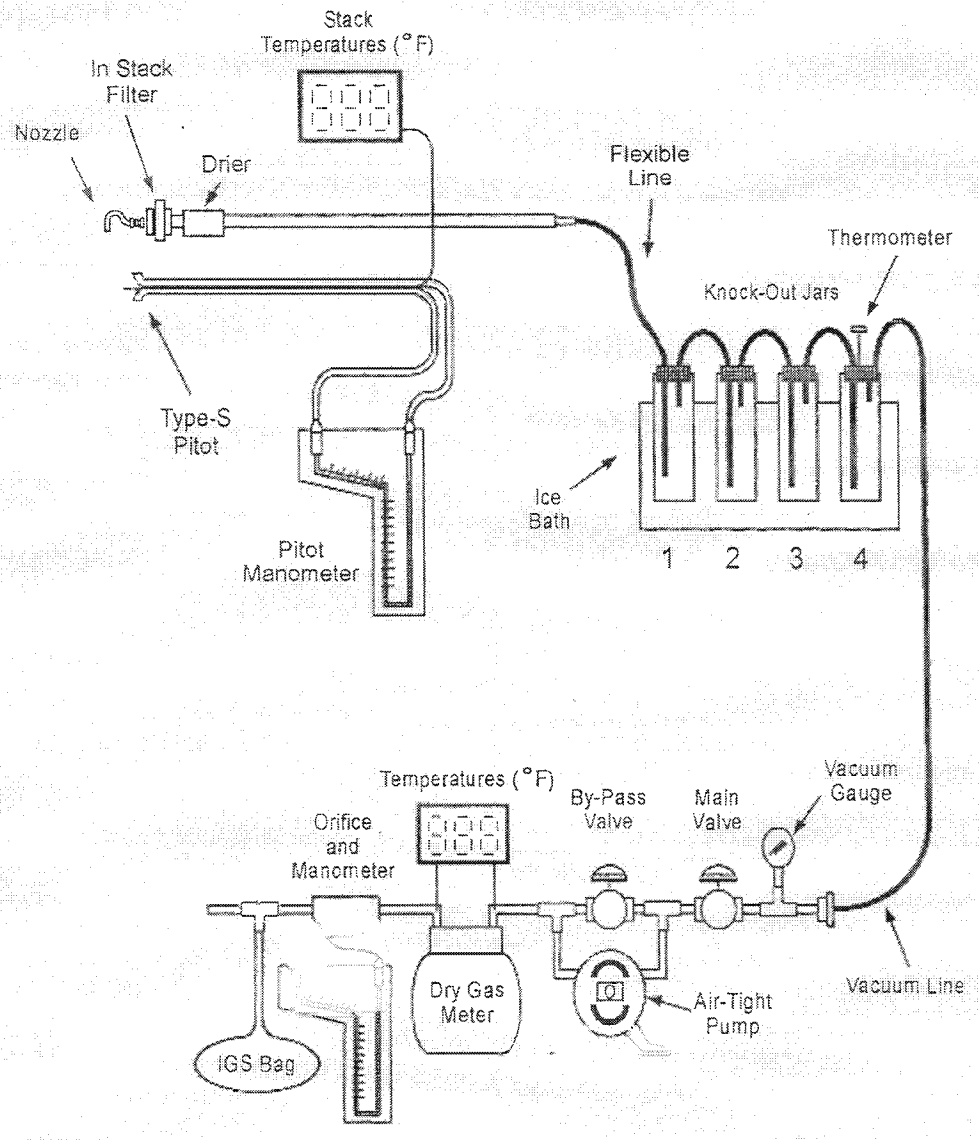
Source Location Name(s)	SCR Outlet
Pollutant(s) to be Determined	Particulate Matter (PM) - Particle Size
Other Parameters to be Determined from Train	Gas Density, Moisture

	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	240 minutes
No. of Sample Traverse Points	N/A	48 points
Sample Time per Point	N/A	5 minutes
Sampling Rate	Isokinetic (90-110%)	Isokinetic (90-110%)
Sampling Probe		
Nozzle Material	Stainless Steel or Glass	Stainless Steel
Nozzle Design	Button-Hook or Elbow	Button-Hook
Probe Liner Material	N/A	Teflon
Effective Probe Length	N/A	6 feet
Probe Temperature Set-Point	N/A	Stack Temp
Velocity Measuring Equipment		
Pitot Tube Design	Type S	Type S
Pitot Tube Coefficient	N/A	0.84
Pitot Tube Calibration by	Geometric or Wind Tunnel	Geometric
Pitot Tube Attachment	Attached to Probe	Separate Probe
Metering System Console		
Meter Type	Dry Gas Meter	Dry Gas Meter
Meter Accuracy	±2%	±1%
Meter Resolution	N/A	0.01 cubic feet
Meter Size	N/A	0.1 dcf/revolution
Meter Calibrated Against	Wet Test Meter or Standard DGM	Wet Test Meter
Pump Type	N/A	Rotary Vane
Temperature Measurements	N/A	Type K Thermocouple/Pyrometer
Temperature Resolution	5.4˚F	1.0˚F
ΔP Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
ΔH Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
Barometer	Mercury or Aneroid	Digital Barometer calibrated w/Mercury Aneroid
Filter Description		
Filter Location	In Stack	In-Stack
Filter Holder Material	Borosilicate, Quartz or Stainless Steel	Stainless Steel
Filter Support Material	Borosilicate, Quartz or Stainless Steel	Stainless Steel
Thimble Material	Glass Fiber (optional)	Stainless Steel
Filter Heater Set-Point	N/A	Stack Temp
Filter Material	Glass Fiber	Glass Fiber
Other Components		
Description	N/A	N/A
Location	N/A	N/A
Operating Temperature	N/A	N/A

Specification Sheet for EPA Method 17

	Standard Method Specification	Actual Specification Used
Impinger Train Description		
Type of Glassware Connections	Leak-Free Glass Connectors	Rubber Hose to Metal Connecting Hardware
Connection to Probe or Filter by	Direct or Flexible Tubing	Flexible Rubber Line
Number of Impingers	4	4
Impinger Stem Types		
Impinger 1	Modified Greenburg-Smith	Glass Bubbler
Impinger 2	Greenburg-Smith	Glass Bubbler
Impinger 3	Modified Greenburg-Smith	Glass Bubbler
Impinger 4	Modified Greenburg-Smith	Glass Bubbler
Impinger 5		
Impinger 6		
Impinger 7		
Impinger 8		
Gas Density Determination		
Sample Collection	Multi-point integrated	N/A
Sample Collection Medium	Flexible Gas Bag	N/A
Sample Analysis	Orsat or Fyrite Analyzer	N/A
Sample Recovery Information		
Nozzle Brush Material	Nylon Bristle	Nylon Bristle
Nozzle Rinse Reagent	Acetone	Acetone
Nozzle Rinse Wash Bottle Material	Glass or Polyethylene	Polyethylene
Nozzle Rinse Storage Container	Glass or Polyethylene	Glass
Filter Recovered?	Yes	Yes
Filter Storage Container	Glass or Polyethylene	Polystyrene
Impinger Contents Recovered?	No	No
Impinger Rinse Reagent	N/A	N/A
Impinger Wash Bottle	N/A	N/A
Impinger Storage Container	N/A	N/A
Analytical Information		
Method 4 H_2O Determination by	Volumetric or Gravimetric	Gravimetric and Volumetric
Filter Preparation Conditions	Dessicate 24 hours minimum at ambient temperature	Dessicate 24 hours minimum at ambient temperature
Front-Half Rinse Preparation	Evaporate at ambient temperature and pressure	Evaporate at ambient temperature and pressure
Back-Half Analysis	N/A	N/A
Additional Analysis	N/A	None

EPA Method 17
Sampling Train Configuration



Knock Out Jar Contents	
Impinger 1	100 ml H_2O
Impinger 2	100 ml H_2O
Impinger 3	Empty
Impinger 4	Silica Gel

EPA Method 17
Sample Recovery Flowchart

- Tare all sample containers before sample collection
- Mark all liquid levels and final weights on the outside of each sample container
- Seal all sample containers with Teflon tape
- If recycling, bake silica gel for two hours at 350 degrees F (175 degrees C)

Container 1A
Glass Filter
Petri Dish

Remove with tweezers to original container. Brush any loose particulate or filter fibers to sample container

Visual Inspection

Container 1B
Thimble
250 ml Nalgene

Remove to original container

Visual Inspection

Container 2
Nozzle and filter front half (FH)
250 ml Glass

Brush/rinse 3X with acetone

Visual Inspection

Label container and measure volume by weight

Container 3
Silica Gel

Measure and record impinger, volume by weight, record condition of indicating gel

Recycle silica gel

Container 4*
500 ml Plastic

Back half (BH) filter housing, Z-piece, impingers 1, 2, 3 and U-bends

Measure and record volume by weight

Empty contents into labeled container

Rinse with water

Visual Inspection

Label container and measure volume by weight

*Containers 4 and 7 are required only when the testing includes a back half analysis

Container 5A
Filter blank
Petri Dish

Clean, unused, tared filter

Container 5B
Thimble

One clean, unused thimble

Container 6
Acetone Blank
250 ml Glass

200 ml of acetone

Container 7*
Water Blank

200 ml of water

EPA Method 17
Analytical Flowchart

- Log each sample in shipment and verify against chain-of-custody sheet
- Note liquid levels in the sample containers and confirm on the chain-of-custody sheet condition

Container 1A
Glass Filter Mat

Dessicate for 24 hours

Weigh to a constant weight (plus or minus 0.5 mg or 1% of total weight gain between two consecutive weighings, with no less than 6 hours of dessication time between) and report to nearest 0.1 mg

Alternatively
Oven dry sample at the average stack temperature or 105 degrees C (220 degrees F), whichever is less, for 2 to 3 hours, cool in a dessicator, and weigh to a constant weight

Container 1B
Thimble

Dessicate for 24 hours

Weigh to a constant weight (plus or minus 0.5 mg or 1% of total weight gain between two consecutive weighings, with no less than 6 hours of dessication time between) and report to nearest 0.1 mg

Container 2
Nozzle and thimble or filter holder front half (FH)

Measure liquid volumetrically

Quantitively transfer the contents to a tared beaker

Evaporate to dryness at ambient temperature and pressure

Dessicate for 24 hours

Weight to a constant weight

Container 3
Silica Gel

Weigh to nearest 0.5 g (This may be done during recovery).

Reagent Blanks
Acetone

Measure liquid volumetrically

Quantitively transfer the contents to a 250 ml tared beaker

Evaporate to dryness at ambient temperature and pressure

Dessicate for 24 hours

Weigh to a constant weight

SAMPLE CALCULATIONS

B

A. Finkl and Sons
Clean Air Project No: 9939
Particulate Sampling

USEPA Method 5 (Particulate)
Sampling, Velocity and Moisture Sample Calculations

1. Volume of water collected (wscf)

$$V_{wstd} = (0.04707)(V_{lc})$$

Where:

Vlc	= total volume of liquid collected in impingers and silica gel (ml)	=	ml
0.04707	= ideal gas conversion factor (ft3 water vapor/ml or gm)	=	ft3/ml
Vwstd	= volume of water vapor collected at standard conditions (ft3)	=	ft3

2. Volume of gas metered, standard conditions (dscf)

$$V_{mstd} = \frac{(17.64)(V_m)\left(P_{bar} + \frac{\Delta H}{13.6}\right)(Y_d)}{(460 + T_m)}$$

Where:

Pbar	= barometric pressure (in. Hg)	=	in. Hg
Tm	= average dry gas meter temperature (°F)	=	°F
Vm	= volume of gas sample through the dry gas meter at meter conditions (dcf)	=	dcf
Yd	= gas meter correction factor (dimensionless)	=	
ΔH	= average pressure drop across meter box orifice (in. H2O)	=	in. H2O
17.64	= standard temperature to pressure ratio (°R/in. Hg)	=	°R/in. Hg
13.6	= conversion factor (in. H2O/in. Hg)	=	in.H2O/in. Hg
460	= °F to °R conversion constant	=	°F
Vmstd	= volume of gas sampled through the dry gas meter at standard conditions (dscf)	=	dscf

3. Sample gas pressure (in. Hg)

$$P_s = P_{bar} + \left(\frac{P_g}{13.6}\right)$$

Where:

Pbar	= barometric pressure (in. Hg)	=	in. Hg
Pg	= sample gas static pressure (in. H2O)	=	in. H2O
13.6	= conversion factor (in. H2O/in. Hg)	=	in. H2O/in. Hg
Ps	= absolute sample gas pressure (in. Hg)	=	in. Hg

4. Moisture measured in sample (% by volume)

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

Where:

Vmstd	= volume of gas sampled through the dry gas meter at standard conditions (dscf)	=	dscf
Vwstd	= volume of water collected at standard conditions (scf)	=	scf
Bwo	= proportion of water measured in the gas stream by volume	=	
		=	%

5. Nitrogen (plus carbon monoxide) in gas stream (% by volume, dry)

$$N_2 + CO = 100 - CO_2 - O_2$$

Where:

CO2	= proportion of carbon dioxide in the gas stream by volume (%)	=	%
O2	= proportion of oxygen in the gas stream by volume (%)	=	%
100	= conversion factor (%)	=	%
N2+CO	= proportion of nitrogen and CO in the gas stream by volume (%)	=	%

6. Molecular weight of dry gas stream (lb/lb·mole)

$$M_d = (M_{CO_2})\frac{(CO_2)}{(100)} + (M_{O_2})\frac{(O_2)}{(100)} + (M_{N_2+CO})\frac{(N_2+CO)}{(100)}$$

Where:

MCO2	= molecular weight of carbon dioxide (lb/lb·mole)	=	lb/lb·mole
MO2	= molecular weight of oxygen (lb/lb·mole)	=	lb/lb·mole
MN2+CO	= molecular weight of nitrogen and carbon monoxide (lb/lb·mole)	=	lb/lb·mole
CO2	= proportion of carbon dioxide in the gas stream by volume (%)	=	%
O2	= proportion of oxygen in the gas stream by volume (%)	=	%
N2+CO	= proportion of nitrogen and CO in the gas stream by volume (%)	=	%
100	= conversion factor (%)	=	%
Md	= dry molecular weight of sample gas (lb/lb·mole)	=	lb/lb·mole

7. Molecular weight of sample gas (lb/lb-mole)

$$M_s = (M_d)(1 - B_w) + (M_{H_2O})(B_w)$$

Where:

Bw	= proportion of water vapor in the gas stream by volume	=	
Md	= dry molecular weight of sample gas (lb/lb-mole)	=	lb/lb-mole
MH2O	= molecular weight of water (lb/lb-mole)	=	lb/lb-mole
Ms	= molecular weight of sample gas, wet basis (lb/lb-mole)	=	lb/lb-mole

8. Velocity of sample gas (ft/sec)

$$V_s = (K_p)(C_p)(\sqrt{\Delta P})\left(\sqrt{\frac{(T_s + 460)}{(M_s)(P_s)}}\right)$$

Where:

Kp	= velocity pressure constant	=	
Cp	= pitot tube coefficient	=	
Ms	= wet molecular weight of sample gas, wet basis (lb/lb-mole)	=	lb/lb-mole
Ps	= absolute sample gas pressure (in. Hg)	=	in. Hg
Ts	= average sample gas temperature (°F)	=	°F
√ΔP	= average square roots of velocity heads of sample gas (in. H2O)	=	√in. H2O
460	= °F to °R conversion constant	=	°F
Vs	= sample gas velocity (ft/sec)	=	ft/sec

9. Volumetric flow rate of sample gas at actual gas conditions (acfm)

$$Q_a = (60)(A_s)(V_s)$$

Where:

As	= cross sectional area of sampling location (ft2)	=	ft2
Vs	= sample gas velocity (ft/sec)	=	ft/sec
60	= conversion factor (sec/min)	=	sec/min
Qa	= volumetric flow rate at actual conditions (acfm)	=	acfm

10. Total flow of sample gas (scfm)

$$Q_s = (Q_a)\left(\frac{P_s}{29.92}\right)\left(\frac{68+460}{T_s+460}\right)$$

Where:

Qa	= volumetric flow rate at actual conditions (acfm)	=	acfm
Ps	= absolute sample gas pressure (in. Hg)	=	in. Hg
29.92	= standard pressure (in. Hg)	=	in. Hg
Ts	= average sample gas temperature (°F)	=	°F
68	= standard temperature (°F)	=	°F
460	= °F to °R conversion constant	=	
Qs	= volumetric flow rate at standard conditions, wet basis (scfm)	=	scfm

11. Dry flow of sample gas (dscfm)

$$Q_{std} = (Q_s)(1-B_w)$$

Where:

Bw	= proportion of water vapor in the gas stream by volume	=	
Qs	= volumetric flow rate at standard conditions, wet basis (scfm)	=	scfm
Qstd	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	dscfm

12. Percent isokinetic (%)

$$I = \frac{(0.09450)(\overline{T_s}+460)(V_{mstd})}{(P_s)(V_s)\left(\frac{(D_n)^2(\pi)}{(144)(4)}\right)(\Theta)(1-B_w)}$$

Where:

Dn	= diameter of nozzle (in)	=	in.
Bw	= proportion of water vapor in the gas stream by volume	=	
Ps	= absolute sample gas pressure (in. Hg)	=	in. Hg
Ts	= average sample gas temperature (°F)	=	°F
Vmstd	= volume of gas sample through the dry gas meter at standard conditions (dscf)	=	dscf
Vs	= sample gas velocity (ft/sec)	=	ft/sec
θ	= total sampling time (min)	=	min
0.0945	= conversion constant	=	
460	= °F to °R conversion constant	=	°F
I	= percent of isokinetic sampling (%)	=	%

Method 5D Flow Calculations

13. Velocity of sample gas at the outlet based on flow measurements at the inlet, Method 5D

$$v = \frac{Q_o}{A_o}$$

Where:

v	= sample gas average velocity (ft/sec)	=	ft/sec
Qo	= volumetric flow rate at outlet sample location (cfm)	=	cfm
Ao	= cross sectional area of outlet sampling location (ft2)	=	ft2

14. Total volumetric flowrate at the outlet, Method 5D

$$Q_O = Q_i + Q_d$$

Where:

Qo	= volumetric flow rate at outlet sample location (cfm)	=	cfm
Qi	= volumetric flow rate at the outlet (cfm)	=	cfm
Qd	= volumetric flow rate of dilution air (cfm)	=	cfm

15. Dilution air volumetric flowrate Method 5D

$$Q_d = \frac{Q_i\left(T_i + T_o\right)}{T_o - T_{amb}}$$

Where:

Qd	= volumetric flow rate of dilution air (cfm)	=	cfm
Qi	= volumetric flow rate at the outlet (cfm)	=	cfm
Ti	= average temperature of gas at inlet, (ºK)	=	ºK
To	= average temperature of gas at outlet, (ºK)	=	ºK
Tamb	= average ambient temperature, (ºK)	=	ºK

A. Finkl and Sons
Clean Air Project No: 9939
Particulate Sampling

Particulate Sample Calculations

1. Particulate concentration (lb/dscf)

$$C_{sd} = \left(\frac{m_n}{V_{mstd}}\right)\left(2.205\times10^{-3}\right)$$

Where:

mn	= total particulate matter (g)	=	g
Vmstd	= volume metered, standard (dscf)	=	dscf
2.205 x 10-3	= conversion factor (lb/g)	=	lb/g
Csd	= particulate concentration (lb/dscf)	=	lb/dscf

2. Particulate concentration (gr/dscf)

$$C_{sd} = \left(\frac{m_n}{V_{mstd}}\right)(15.43)$$

Where:

mn	= total particulate matter (g)	=	g
Vmstd	= volume metered, standard (dscf)	=	dscf
15.43	= conversion factor (gr/g)	=	gr/g
Csd	= particulate concentration (gr/dscf)	=	gr/dscf

3. Particulate concentration (mg/dscm)

$$C_{sd} = \left(\frac{m_n}{V_{mstd}}\right)(1000)(35.31)$$

Where:

mn	= total particulate matter (g)	=	g
Vmstd	= volume metered, standard (dscf)	=	dscf
1,000	= conversion factor (mg/g)	=	mg/g
35.31	= conversion factor (dscf/dscm)	=	dscf/dscm
Csd	= particulate concentration (mg/dscm)	=	mg/dscm

5. Particulate rate (lb/hr)

$$E_{lb/hr} = \left(\frac{m_n}{V_{mstd}}\right)\left(2.205\times10^{-3}\right)(Q_{std})(60)$$

Where:

mn	= total particulate matter (g)	=	g
Vmstd	= volume metered, standard (dscf)	=	dscf
2.205 x 10-3	= conversion factor (lb/g)	=	lb/g
Qstd	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	dscfm
60	= conversion factor (min/hr)	=	min/hr
Elb/hr	= particulate rate (lb/hr)	=	lb/hr

SAMPLE DATA FIELD SHEETS

C

TEST LOCATION: _____ TESTING METHOD: _____ PAGE ___ OF ___

UNIT: _____ RUN: _____

FIELD DATA SHEET

Client	Project No.
Plant	Date
Meter Operator	
Probe Operator	

Meter Box		Sample Box No.	
Meter Y_d		Meter $\Delta H_@$	
K Factor		Pitot C_p	
Leak Rate Before	[cfm] [Lpm]	@	(in. Hg)
Leak Rate After	[cfm] [Lpm]	@	(in. Hg)
Pitot Leak Check Before: ☐	After: Good ☐	Bad ☐	

Cross-Section of Test Location

[N] [UP]

Duct Dimensions (in.)			
Static Pres ($in. H_2O$)	Port Len. (in.)	Gas Flow [In] [Out] of probe	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Pitot I.D. No.	
Liner Material	
[illegible] No.	
Probe No.	
Nozzle Diameter	Nozzle I.D.

Start Time: _____ Stop Time: _____

Traverse Point Number	Min/pt Elapsed Time	Velocity Head ΔP ($in. H_2O$)	Orifice Setting ΔH ($in. H_2O$)	Gas Sample Volume V_m Init. Vol. [ft^3] [L]	Stack Temp. T_s (°F)	Probe T_p / Filter (°F) Set Points	Cond. Temp. T_c (°F)	DGM Inlet $T_{m,in}$ (°F)	DGM Outlet $T_{m,out}$ (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp. T_r (°F)	Notes
	Total											
	Average											

* Sum of square roots.

Circle correct bracketed units on data sheet.

SAMPLE

CleanAir. ENGINEERING

QA/QC_____

Date

METHOD 1 FIELD DATA SHEET

TEST LOCATION: _____

UNIT: _____

Client		Project No.	
Plant		Date	
Duct Dimensions	(in.)	Area	(ft^2)
Port Length	(in.)	Port Diameter	(in.)
Equivalent Diameter (Rectangular Ducts) Deq=2LW/(L+W)			(in.)
Disturbance to Port Distance Upstream (A)			x D
Disturbance to Port Distance Downstream (B)			x D
Number of Points Required			
Number of Points / Port Required			

Point	% Diameter	Point Distance	Probe Mark
	Round Stacks Only	X	X + Port Depth

Location Schematic

Show side view of stack, including disturbances and port placement.

[N] [UP]

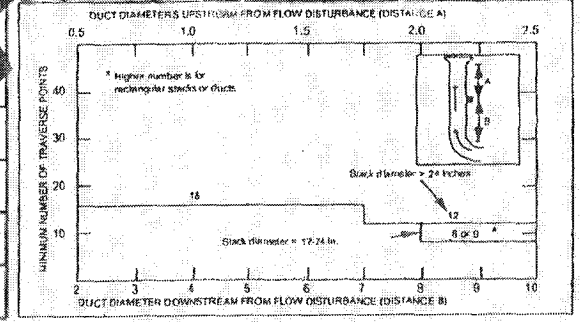
Traverse point number	Number of traverse points on a diameter					
	4		8	10	12
1	85.4	93.3	96.8	97.4	97.9
2	64.4	85.4	89.5	91.8	93.3
3	35.6	70.4	80.6	85.4	88.2
4	14.6	29.6	67.7	77.4	82.3
5	4.4	14.6	32.3	65.8	75.0
6		4.4	19.4	34.2	64.4
7			10.5	22.6	35.6
8			3.2	14.6	25.0
9				8.2	17.7
10				2.6	11.8
12					6.7
12					2.1

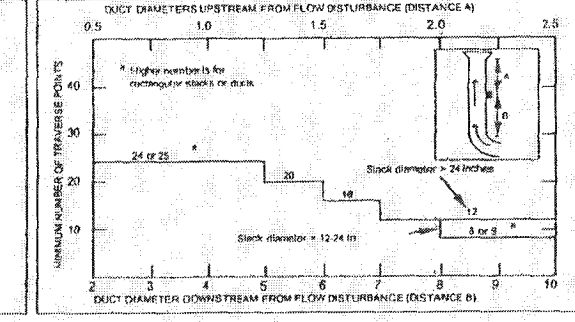
Location Schematic

Show cross-section of stack, indicating port placement.

[N] [UP]

Gas Flow [IN] [OUT] of page





Circle correct bracketed directions on diagrams.

QA/QC_____

Date_____

CleanAir ENGINEERING

ORSAT READINGS

TEST LOCATION: ____________________ **PAGE** _____ **OF** _____

Client		Project Number	
Plant		Unit	
Orsat ID		Fuel Type	

$$Fo = \frac{20.9 - \%O_2}{\%CO_2}$$

Leak Check Passed ☐

Run Number	Method Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Fo	Analyst	Analysis Date	Analysis Time
		1							
		2							
		3							
		Avg.							
		1							
		2							
		3							
		Avg.							
		1							
		2							
		3							
		Avg.							
		1							
		2							
		3							
		Avg.							
		1							
		2							
		3							
		Avg.							
		1							
		2							
		3							
		Avg.							

Repeat the analysis procedure until the results of any three analyses differ by no more than 0.2 percent by volume Average the three acceptable values and report the results to the nearest 0.1 percent. Calculate Fo to verify result

Acceptable ranges for Fo:

Coal:	Anthracite and lignite	1.016-1.130	Gas:	Natural	1.600-1.836
	Bituminous	1.083-1.230		Propane	1.434-1.586
Oil:	Distillate	1.260-1.413		Butane	1.405-1.553
	Residual	1.210-1.370	Wood:		1.000-1.120

QA/QC______
Date______

CleanAir ENGINEERING

TEST LOCATION: _____ **VELOCITY DETERMINATION FIELD DATA SHEET** PAGE ___ OF ___

UNIT: _____

Client	Project No.
Plant	Date
Meter Operator	
Probe Operator	
Source of Moisture and Molecular Weight Data	

Cross-Section of Test Location

[N] [UP]

Amb. Temp. (°F)	Bar. Press [in. Hg] [mbar]
Pitot Cp	Probe I.D. No.
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way [In] [Out]	Port Len. (in.)
Gas flow [In] [Out] of page	
Duct Dimensions (in.)	

Run	Load	Run	Load	Run	Load	Run	Load
Start Time	Stop Time	Start Time	Stop Time	Start Time	Stop Time	Start Time	Stop Time
Static Press. (in. H_2O)		Static Press. (in. H_2O)		Static Press. (in. H_2O)		Static Press (in. H_2O)	
Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in. H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in. H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in. H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in. H_2O)	Notes
Total		*				*				*				*	
Average															

* Sum of square roots. Circle correct bracketed units on data sheet.

QA/QC_____

Date_____

CleanAir. ENGINEERING

APPENDIX II

Title V Permit Issued to A. Finkl & Sons

Date Issued: October 24, 2000

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

P.O. BOX 19506, SPRINGFIELD, ILLINOIS 62794-9506

THOMAS V. SKINNER, DIRECTOR

217/782-2113

TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
and
TITLE I PERMIT[1]

PERMITTEE

A. Finkl & Sons
Attn: Carl Manthe
2011 North Southport Avenue
Chicago, Illinois 60614

Application No.: 95120184
Applicant's Designation:
Operation of: Iron and Steel Forging
Date Issued: October 24, 2000
Source Location: 2011 North Southport Avenue, Chicago, Cook, IL 60614
Responsible Official: Bruce Liimatainen/President

I.D. No.: 031600ATP
Date Received: December 8, 1995
Expiration Date[2]: October 24, 2005

This permit is hereby granted to the above-designated Permittee to operate an Integrated Steel Forging Source, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

If you have any questions concerning this permit, please contact Nathan A. Frank at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:NAF:psj

cc: Illinois EPA, FOS, Region 1
USEPA

[1] This permit may contain terms and conditions which address the applicability, and compliance if determined applicable, of Title I of the CAA and regulations promulgated thereunder, including 40 CFR 52.21 - federal PSD and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within this permit.

[2] Except as provided in Condition 8.7 of this permit.

TABLE OF CONTENTS

1.0 SOURCE IDENTIFICATION

1.1 Source

A. Finkl & Sons
2011 North Southport Avenue
Chicago, Illinois 60614
(773) 975-2649

I.D. No.: 031600ATP
Standard Industrial Classification: 3462

1.2 Owner/Parent Company

A. Finkl & Sons
2011 North Southport Avenue
Chicago, Illinois 60614

1.3 Operator

A. Finkl & Sons
2011 North Southport Avenue
Chicago, Illinois 60614

Carl Manthe
(773) 975-2649

1.4 General Source Description

The A. Finkl & Sons plant is located at 2011 North Southport Avenue, Chicago, Illinois 60614. The source is an integrated producer of large steel forgings.

2.0 LIST OF ABBREVIATIONS/ACRONYMS USED IN THIS PERMIT

Act	Illinois Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollutant Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711
Btu	British thermal unit
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CFR	Code of Federal Regulations
HAP	Hazardous Air Pollutant
hr	hour
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
Illinois EPA	Illinois Environmental Protection Agency
kW	kilowatts
lb	pound
ILCS	Illinois Compiled Statutes
mmBtu	Million British thermal units
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM_{10}	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
ppm	parts per million
PSD	Prevention of Significant Deterioration
RMP	Risk Management Plan
SO_2	Sulfur Dioxide
T1	Title I - identifies Title I conditions that have been carried over from an existing permit
T1N	Title I New - identifies Title I conditions that are being established in this permit
T1R	Title I Revised - identifies Title I conditions that have been carried over from an existing permit and subsequently revised in this permit
USEPA	United States Environmental Protection Agency
VOM	Volatile Organic Material

3.0 INSIGNIFICANT ACTIVITIES

3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a)(1) and 201.211, as follows:

Natural gas fired furnaces and boilers rated below 10 MBtu/hr.

3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a)(2) or (a)(3), as follows:

None

3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a)(4) through (18), as follows:

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b).

3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.2.2), the Permittee shall comply with the following requirements, as applicable:

3.2.1 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 215.182, 218.182, or 219.182.

3.2.2 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the

emission unit's process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.

3.2.3 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 215.301, 218.301, or 219.301, which requires that organic material emissions not exceed 8.0 pounds per hour or do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.

3.3 Addition of Insignificant Activities

3.3.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).

3.3.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type addressed by 35 IAC 201.210(a)and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12)(b) of the Act.

3.3.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Emission Unit	Description	Date Constructed	Emission Control Equipment
Furnace 4646060	40 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 4646070	40 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 4646080	40 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 6346070	23.76 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 6346080	23.76 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 6262230	23.08 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 4862050	16 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 6363010	16 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 6262210	15.385 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 6262220	15.385 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 6262240	15.385 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 6262250	15.385 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Boiler 3737010	14.5 MBtu/hr Rated Natural Gas Fired Steam Generation Boiler	Pre-1972	None
Furnace 6363040	14 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 4646030	10 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Furnace 4646090	10 MBtu/hr Rated Natural Gas Fired Metal Heating Furnace	Pre-1972	None
Arc Furnace 4848010	Electric Arc Furnace Used to Melt Steel Scrap	Pre-1972	Baghouse 484801A
Arc Furnace 4848020	Electric Arc Furnace Used to Melt Steel Scrap	Pre-1972	Baghouse 484802A
Scarfing Station 6464010	Ingot Surface Preparation Processes	Pre-1972	Baghouse 646401A
Shot Blast 6262500	Cleaning of Steel Forgings	Pre-1972	Baghouse 626250A
Quench Oil Tank 6262400	Cooling of hot forgings in oil quenchant	Pre-1972	None
Teeming 4848400	Pouring liquid steel into a mold to solidify	Pre-1972	None
Fugitive Particulate Matter Emissions	Particulate Matter Emissions from storage piles, equipment handling, and loading and unloading	-	None

5.0 OVERALL SOURCE CONDITIONS

5.1 Source Description

5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source of nitrogen oxide and carbon monoxide emissions.

5.1.2 This permit is issued based on the source not being a major source of HAPs.

5.2 Applicable Regulations

5.2.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions) of this permit.

5.2.2 In addition, emission units at this source are subject to

APPENDIX III, PART A
DIESEL RETROFIT SUPPLEMENTAL ENVIRONMENTAL PROJECT
SCOPE OF WORK

1. The Diesel Retrofit Supplemental Environmental Project ("SEP") is designed to reduce emissions of particulate matter and other air contaminants from approximately 34 vehicles operated by the City of Chicago ("City") in the vicinity of the facility owned and operated by A. Finkl & Sons Co. ("A. Finkl") at 2011 North Southport Avenue in Chicago, Illinois. The project will retrofit diesel trucks or other equipment owned by the City of Chicago with EPA verified diesel oxidation catalysts. No school buses shall be retrofitted as part of this SEP.

2. A. Finkl shall spend $75,000 to fund the following SEP components:

a. Within forty-five (45) days after the effective date of the Consent Decree, A. Finkl shall enter into a contract with the City of Chicago for the purchase of diesel oxidation catalysts for approximately 34 City trucks or other equipment.

b. No later than one (1) year after the effective date of the Consent Decree, all of the 34 City trucks or other equipment shall be retrofitted with EPA verified diesel oxidation catalysts.

3. In addition to the information specified in Paragraph 25 of the Consent Decree, A. Finkl shall provide in the SEP Completion Report the following information for each vehicle retrofitted with a diesel oxidation catalyst:

a. vehicle number;

b. vehicle type;

c. model year;

d. engine manufacturer;

e. engine size (horsepower);

f. annual miles or hours of operation;

g. diesel oxidation catalyst manufacturer;

h. retrofit cost per vehicle (equipment and installation costs to be identified separately);

i. fuel usage (gallons per year); and

j. estimated emission reductions based on EPA verified numbers of hydrocarbons, particulate matter and carbon monoxide.

APPENDIX III, PART B
LOW NITROGEN OXIDE ("NO_x") BURNER SYSTEM
SUPPLEMENTAL ENVIRONMENTAL PROJECT
SCOPE OF WORK

1. The Low NO_x Burner System Supplemental Environmental Project ("SEP") is designed to reduce emissions of NO_x from the facility owned and operated by A. Finkl and Sons Co. ("A. Finkl") at 2011 North Southport Avenue in Chicago, Illinois ("Facility"). A. Finkl shall install a low NO_x burner system including the low NO_x burners and control systems on furnace 4644100 currently rated at 6,426 mm BTU/hr at its Facility. The NO_x emission rate from the furnace after installation of the low NO_x burner system shall be reduced to 0.8245 pounds per hour based on the manufacturer's guarantee.

2. A. Finkl shall spend no less than $545,000 to complete the following SEP components of which $445,000 shall be spent on outside suppliers and contractors and not more than $100,000 may be expended on internal labor by A. Finkl including wages and benefits:

a. Within two (2) weeks after the effective date of the Consent Decree, A. Finkl shall commence engineering for the project.

b. Within three (3) months after the effective date of the Consent Decree, A. Finkl shall complete engineering for the project and ordering of equipment.

c. Within seven (7) months after the effective date of the Consent Decree, low NO_x burner system shall be delivered to the Facility.

d. Within eight (8) months after the effective date of the Consent Decree, A. Finkl shall remove the existing burners on the gas-fired furnace on which the low NO_x burner system shall be installed.

e. Within eleven (11) months after the effective date of the Consent Decree, A Finkl shall install the new low NO_x burner system on furnace 4644100.

f. Within twelve (12) months after the effective date of the Consent Decree, A. Finkl shall begin operating the low NO_x burner system.

g. Within fourteen (14) months after the effective date of the Consent Decree, A. Finkl shall conduct a compliance test to measure the emissions from the furnace equipped with the low NO_x burner system. Not later than thirty (30) days prior to the proposed test date, A. Finkl shall submit an "Intent to Test" notification to EPA. The "Intent to Test" notification / "Test Protocol" shall be submitted to the individuals listed in Section XV of the Consent Decree (Notices) and to the Illinois EPA officials identified in Paragraph 16 of this Consent Decree. The notification /

protocol shall describe in detail the proposed test methods and procedures, the source operating parameters, the time and date of the test, the person conducting the test and the Facility's Identification Number. Within thirty (30) days, EPA shall approve, approve with comments or disapprove the Intent to Test notification. If EPA does not approve, approve with comments or disapprove the notification within thirty (30) days, the notification shall be deemed approved. A. Finkl shall provide EPA and Illinois EPA with an opportunity to observe such test. Within thirty (30) days after the completion of the emissions test, A. Finkl shall submit a complete emission test report detailing the result of the test to EPA as provided by Section XV of the Consent Decree (Notices) and to Illinois EPA.

3. A. Finkl shall never use or sell in any emission trading or marketing program of any kind any NO_x emission allowances or credits resulting from the installation of low NO_x burner system installed pursuant to this SEP.

4. A. Finkl shall never use any NO_x emission reductions generated as a result of the installation of low NO_x burner system installed pursuant to this SEP for the purpose of obtaining netting credits or offsets under the Clean Air Act's (the "Act") PSD (meaning the prevention of significant deterioration program within the meaning of Part C of Title I of the Act, 42 U.S.C. §§ 7470-7492, 40 C.F.R. Part 52 and Illinois SIP) or NSR (meaning the nonattainment area new source review program within the meaning of Part D of Subchapter I of the Act, 42 U.S.C. §§ 7501-7515, 40 C.F.R. Part 51 and Illinois SIP) programs.

5. A. Finkl shall continuously use or operate the low NO_x burner system installed as a SEP for not less than five (5) years subsequent to installation.